TECHNOLOGY DEPARTMENT

NEW EQUIPMENT DIGEST

A PENTON PUBLICATION

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 12 February, 1947 No. 2

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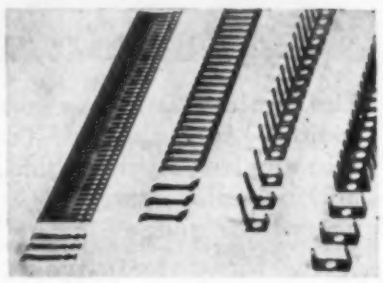
DETROIT

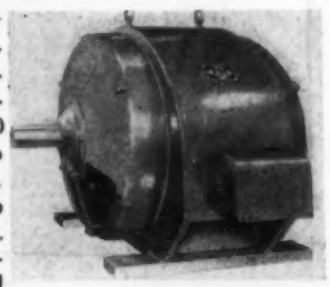
CONTINUOUS STRIP SPRINGS



Significant savings in assembly and handling time as well as low production cost are features of springs and small stampings produced by continuous strip method. Individual small springs are fabricated of beryllium copper in continuous, easy to handle lengths, with sections between parts partially sheared through. Attachment between parts is strong enough to keep lengths intact during inspection, plating, handling and shipment. Pieces can be snapped off easily for assembly. Lengths can be inserted in dispenser at work benches for speed in use. Illustrated springs were produced for refrigerator control, automobile heater and electric clock motor. Made by **Instrument Specialties Co., Little Falls, N. J.**

▲ Mention Item NED-675 when writing ▲

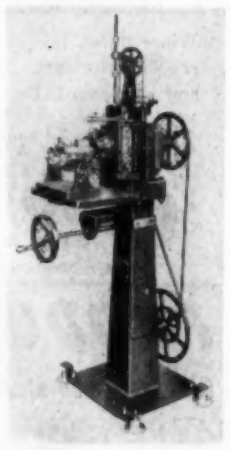
INDUCTION MOTOR



Available for heavy duty applications, squirrel cage induction motors can be furnished for power drives requiring from 100 to 1000 horsepower at speeds up to 1800 revolutions per minute. They are designed for drip and splashproof operation. Fabricated steel frame excludes falling particles and makes operation quiet. Sealed bearings can be cleaned and refilled without motor disassembly. Double end ventilation is provided by blower on each end of rotor. Starting characteristics are NEMA class B for across-the-line starting. Made by **Electric Machinery Mfg. Co.**, 821 Second Ave., S. E., Minneapolis 13, Minn.

▲ Mention Item NED-676 when writing ▲

ENGINE TURNING MACHINE

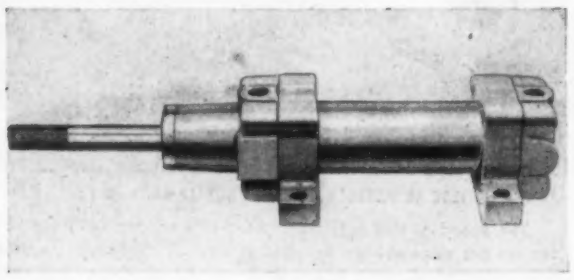


Two models of this 6-inch straight lining engine turning machine are available. One is equipped with rosette attachment and slide rest and second model has rosette attachment, sun ray attachment and slide rest. Both machines feature ball bearing mounted rotating parts, freedom of slide movement and adjustment for length of stroke. Single or compound drive is used from handwheel to slide traverse. Vibration is held to minimum. Removable plate in base facilitates changing of counter-weights. Made by **Lawrence H. Cook, Inc.**, 65 Massasoit Ave., East Providence, R. I.

▲ Mention Item NED-677 when writing ▲

HYDRAULIC CYLINDER

Seven standard mountings make this Natdraulic cylinder ad ptable to most initial equipment needs. Cylinders are available in bore sizes ranging from 1 to 12 inches. Stroke



can be any length and units will operate on pressures of up to 1500 pounds per square inch with a 5 to 1 safety factor. Additional features of cylinders are long bronze side thrust bearings, alloy steel rods and seamless tubing bored and honed to mirror finish. All tolerances and concentricity are held within given limits. Cylinders can be designed and engineered for special tooling. Made by **National Hydraulic Co.**, 4505 Oakwood Blvd., Melvindale, Mich.

▲ Mention Item NED-678 when writing ▲

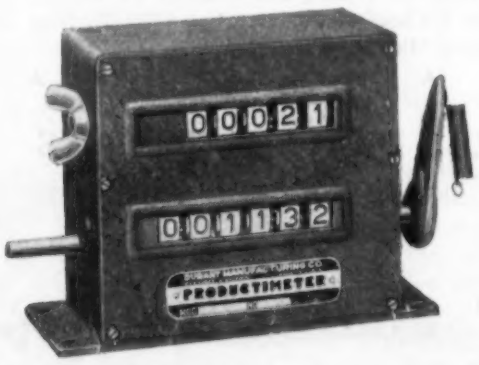
HEAVY DUTY SKID PLATFORM

Designed to withstand severe usage in handling heavy castings, scrap and other types of industrial products, this Phil-Skid heavy duty skid platform can be furnished in any desired size for use with various types of lift trucks. Platforms are of all welded steel construction and have heavy corrugated steel deck. No bolts or screws are employed so that load will not be scored or torn. Three-inch channel legs made of 3/16-inch steel plate eliminate possibility of load tipping. Made by **Phillips Mine & Mill Supply Co.**, 2219 Jane St., Pittsburgh 3, Pa.

▲ Mention Item NED-679 when writing ▲

ROTARY & STROKE COUNTER

Available in both conventional and predetermined types, series N double deck rotary and stroke counters provide for registering current runs and daily, weekly or monthly pro-



duction totals. Rotary models have double worm drive for smooth action and high speed. Stroke models are designed so that upper row is chain driven. Predetermined models have switch mechanism that gives positive action at predetermined count. Both front and back covers of instrument case are aluminum. Louvers are designed for easy reading. Made by **Durant Mfg. Co.**, 1922 N. Buffum St., Milwaukee 1, Wis.

▲ Mention Item NED-680 when writing ▲

Do You Know

■ DESIGNED to illustrate all principles involved in modern radio receiver construction, kits are similar to type used extensively in Army and Navy radio and electronic training courses. Available for educational purposes, these radio kits contain all necessary parts, diagrams and instructions to build a complete five-tube superheterodyne receiver. Made by General Electric Co., education section, Electronics Dept., Wolf St. Plant, Syracuse, N. Y.

▲ Mention Item NED-681 when writing ▲

Commonly used as cushioning for upholstered furniture, Airfoam latex is now being employed as carpet padding. Material, 3/8-inch thick, is placed directly between carpet and floor and is claimed to result in unusual underfoot comfort, prevent carpet from creeping even on marble floors and add to life of floor covering. Airfoam made by Goodyear Tire & Rubber Co., 1144 E. Market St., Akron 16, O.

▲ Mention Item NED-682 when writing ▲

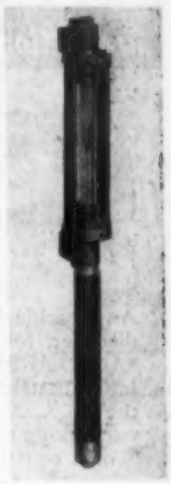
Television has made its debut to industry in form of sight transmitting system known as the Utiliscope. Equipment reproduces on screen, similar to that of home television receiver, an exact picture of something currently taking place at remote or inaccessible point. At Hell Gate power station of Consolidated Edison Co., it shows water level in boiler remotely located from main control room. Many other industrial uses are planned. This equipment was developed in collaboration with Diamond Specialty Corp. by Farnsworth Television & Radio Corp., Ft. Wayne, Ind.

▲ Mention Item NED-683 when writing ▲

Read Carefully
CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

RECORDING FLOW METER



Utilizing Foxboro Co. Dynalog system of transmission by electronic high frequency circuits, this recording rotameter offers instantaneous response to change of flow, continuous balance and elimination of overtravel. Flow of any liquids or gases in any pipe line can be recorded. Recording is based on induction bridge system.

Unit construction utilizes four principal assemblies. Direct linkage is effected without gears. Transmitter assembly is available for recording rotor position of many standard SK rotameter designs, including SK universal recording rotameters (*Item NED-2526 May '44*) and Armored rotameters. Made by **Schutte & Koerting Co.**, Twelfth & Thompson Sts., Philadelphia 22, Pa.

▲ Mention Item NED-684 when writing ▲

INDUSTRIAL SHOP TRUCK

Added to line of industrial shop trucks, model TR Chore Boy tractor has drawbar pull of 1050 pounds and weighs approximately 1300 pounds. It is designed for low-cost towing

and pick-up work in industrial plants, warehouses and railroad freight stations and for loading trucks. Overall length is 63¾ inches and width is 37½ inches. Driver sits in comfortable seat and has clear view of all handling operations. Truck is equipped with two brakes, one a foot brake and other an automatic brake that is applied when driver leaves seat. Transmission is automotive type with three speeds forward and one reverse. Clutch is patented cone type. Power is furnished by 4-cycle, air cooled gasoline engine with magneto ignition. It is located under driver's seat. Truck is of all welded steel construction and can be supplied with any type standard hitch. Made by Buda Co., 15440 Commercial Ave., Harvey, Ill.

▲ Mention Item NED-685 when writing ▲

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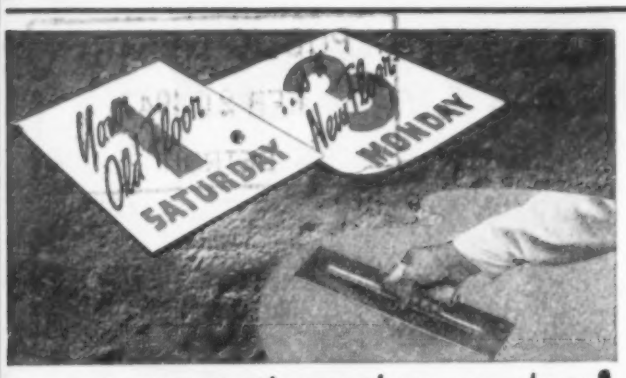

with PLASTIC ROCK!

Trowel a smooth, tough, malleable surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels; nothing more to buy; no application "formula" to confuse you. Simply mix and trowel right over old floor; sticks to concrete, wood, steel; average depth ½"; patches concrete to perfect feather edge. Old floor Saturday, new floor Monday; hundreds of tons rolling on steel wheels only improve it; 7-year-old floors show no wear. Plastic Rock is spark-proof, skid-safe even when wet, dustless, silent; feels like cork under foot; cannot splinter, crack, crumble, curl or loosen. Used by largest Industries and railroads in America. Your contractor or your own crew can apply.

Ask for Report 220-D-2

UNITED LABORATORIES, INC.
16804 EUCLID AVENUE · CLEVELAND 12, OHIO
In Canada—STORRAR MFG. COMPANY, Weston, Ontario

Representatives everywhere, including foreign countries

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ASCO "AUTO-ARB" can triple production on many secondary operations

Automatically Expanding Arbor for holding work piece by inside diameter while machining outside surface.

PERMITS CHUCKING and UNCHUCKING *WITHOUT STOPPING SPINDLE!*

Any machinable part can be held firmly by the inside diameter, for secondary operations, with the ASCO "AUTO-ARB". "AUTO-ARB" is a precision tool, expanding accurately, and maintaining perfect concentricity with the collet. No other tools are necessary—chucking and unchucking can be done without stopping the machine. Works equally well in "blind" holes, and requires a minimum of holding surface—eliminating the need for special arbors. Can also be used on drill presses or milling machines with collet devices.

Auto-Arb is available in range of standard sizes, from ⅜" to 1½", at 1/64" intervals. Only 5 collet sizes are required to accommodate this range. Larger sizes available on special order.

Auto-Arb has been proved by production tests—more than tripling production and eliminating downtime of machines. No failures have been reported from the hundreds already in actual service.

Write for descriptive Bulletin

THE ASCO CORPORATION
17708 WATERLOO ROAD • CLEVELAND 19, OHIO

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Tachometers

MAINTAIN RPM AND PRODUCTION RATES IN YOUR PLANT

STATIONARY MODELS

Dials 3", 4", 5½", 8", 10", and 20" in diameter.

Dials to read RPM, FPM, YPM, sheets per minute, gallons per minute, books per minute, or any other special operation.

Write for Bulletins Nos. 795, 796, 797, 798

STOP WATCHES IMPORTED SWISS

Large assortment of Gallet and Minerva watches of highest quality and accuracy 1/5 second, 1/10 second, 1/100 second timers. Also decimals (minute divided into 100 parts).

WRITE FOR BULLETIN No. 575

PORTABLE MODELS

Centrifugal or Chronometric type with 1, 3, or 5 ranges in one instrument, all speeds from 0-100,000 RPM.

Write for Bulletins Nos. 780, 760, 790, 750, 755, 735

NEW CONDENSED CATALOG No. 1046 SHOWS ALL TACHOMETERS

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE NEW YORK 7, N. Y.

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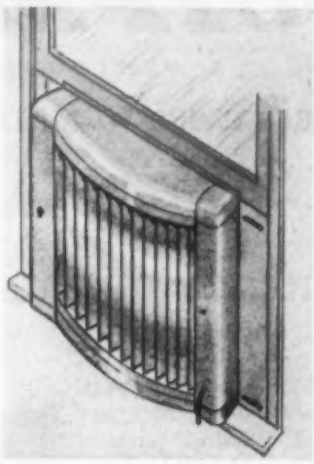
WINDOW TYPE COOLER



Equipped with metal fillins, this window type evaporative cooler is adjustable in width from 24 to 34½ inches to fit almost any window width. Adjustable directional louvers, motor and water flow control switches are placed on front panel to provide complete control of operation from within room. Design is claimed to eliminate installation problems.

Cabinet is made of 22-gage rust resistant steel. Recessed fan orifice prevents air loss or recirculation. Sno-Fluf cooling pad, which is water moistened, is made of odorless aspen. Fan is 16 inches in diameter and is powered by 1/25-horsepower electric motor. Motor requires lubrication only once a season. Made by **Palmer Mfg. Corp.**, 705 W. Jefferson St., Phoenix, Ariz.

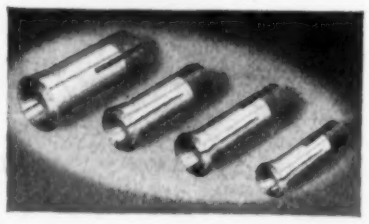
▲ Mention Item NED-689 when writing ▲

PLATING RACK COATING

Tough flexible Pen-Kote 590 is highly resistant to all plating and cleaning solutions including chlorinated degreasing solvents. Material consists of aqueous dispersion of Saran plastic and contains no organic solvents. It can be applied to plating racks by hand dipping and will dry in less than 1 hour at room temperature, giving complete protection in 24 hours. Because material is an aqueous dispersion rather than solution, it is free flowing and will drain rapidly so as not to form webs or strands to be trimmed off after dipping. Sample racks will be given free trial coating and returned for testing. Made by **Peninsular Chemical Products Co.**, 6795 E. Nine Mile Rd., Van Dyke, Mich.

▲ Mention Item NED-690 when writing ▲

BRASS DRAW-IN COLLETS



Adaptable for use on short run production jobs and for odd sizes that are used only occasionally, these precision draw-in collets are made of brass. Units were designed for use with South Bend lathes but are available in four styles and can be purchased for use with any machine which they will fit. Brass collets are furnished in standard fractional sizes from 1/16-inch capacity in increments of 1/64-inch up to maximum capacity of collet. They are available also with decimal hole sizes for any diameter between 0.0625-inch and maximum capacity of collet.

Brass collets are not intended to replace more expensive hardened steel units. They are manufactured to same tolerances however, and low cost makes them practical for short run production and occasional jobs. Collets can be machined for holding tapers or irregular shapes. Made by **South Bend Lathe Works**, 307 E. Madison St., South Bend 22, Ind.

▲ Mention Item NED-691 when writing ▲

SYNTRON
"Vibra-Flow"

VIBRATORY FEEDERS

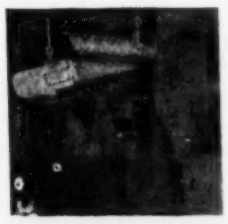
Have 5 Distinct Features—

1. Handle a range of materials from light, fine powders to heavy, coarse ores.
2. Provide rheostat control of material flow.
3. Have no moving, wearing mechanical parts.
4. Available in a variety of trough styles, flat pan, tubular, grizzly, spreader, etc.
5. Capacities of from a few pounds to 500 tons per hour

THAT WILL INCREASE YOUR MATERIAL HANDLING EFFICIENCY

Write for Folder 9-46

SYNTRON CO.
405 Lexington, Homer City, Pa.



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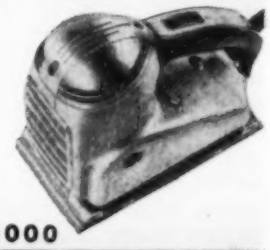
SANDER

FAST PORTABLE ELECTRIC • FOR WOOD METAL PLASTICS • SANDS • FINISHES • POLISHES

The Sterling Sander is many times faster than tedious hand sanding! It's simple to operate, vibrationless, light weight. Produces a smooth, uniform surface and will not mar or gouge.



Write for descriptive folder now! Sterling Tool Products Co., 378 East Ohio St., Chicago 11, Ill.

STERLING 1000 SANDER
PORTABLE ELECTRIC

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When floors become oil-soaked and dangerous, it's time to cry for SOL-SPEEDI-DRI. SOL-SPEEDI-DRI keeps floors clean, dry and skid-proof. For a FREE SAMPLE—write today!

SUPPLIERS:
East—Safety & Maintenance Co., Inc., No. 1 Wall St., New York 5, N. Y.
South, Midwest & West Coast—Waverly Petroleum Products Co., Drexel Bldg., Philadelphia 6, Pa.

SOL-SPEEDI-DRI
OIL AND GREASE ABSORBENT

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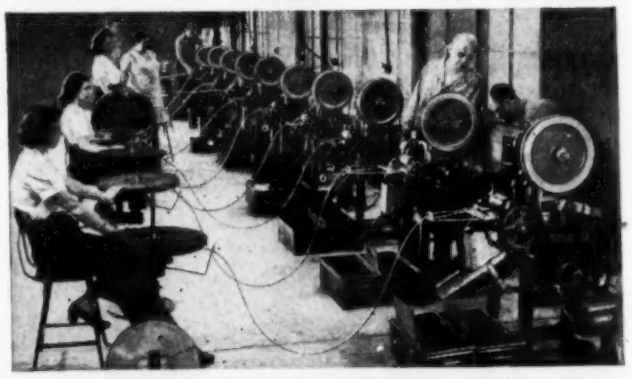
PRODUCTION PLUS!

OVER a million stampings per day with this battery of

DIEBEL Hi-Speed 550 RPM AUTOMATIC PRESSES



THESE 10 PRESSES OCCUPY ONLY 12 FT. x 45 FT.

The speed of this automatic press—it's adjustable up to 550 strokes per minute!—has resulted in soaring production records over a period of years in hundreds of plants. Diebel Hi-Speed Automatic Presses, like those above, have performed wonders on steel, brass, phosphor-bronze, fiber, plastics, rubber and paper.

May we send you our illustrated circular? It's yours for the asking—an introduction to the solution of your light blanking and forming problems.

DI MACHINE CORP.
DIVISION OF DIEBEL DIE & MFG. CO.
2701 West Irving Park Road Chicago 18, Illinois

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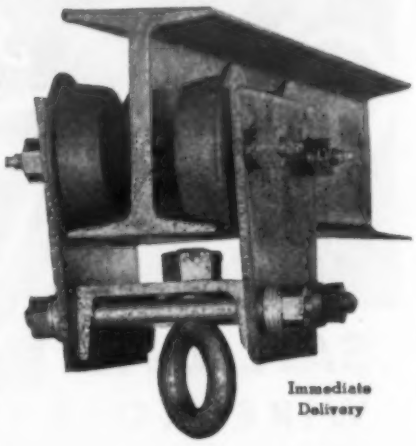
GRAY TROLLEYS

For Any Size I-Beam



GRAY TROLLEYS are designed to meet the demand of industry for a trolley with closest possible head room. They safely and efficiently raise loads, are easily transferable through the shop, and are equipped with New Type, Thoroughly Sealed, Gray Ball Bearing Trolley Wheels.

Long trouble-free service is what you get with every GRAY TROLLEY and that's an important consideration today. Made in 250 lb. to 2-ton standard capacity sizes adjustable to suit various I-Beams. We would like you to have our bulletin which describes and illustrates in detail our TROLLEYS and our TROLLEY WHEELS! Send for it now!

GRAY HUB COMPANY
Incorporated
17265-17403 GABLE AVENUE DETROIT 12, MICHIGAN

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No. 22 Horizontal Boring, Milling, Drilling and Tapping Machine for tool room work, light production and adaptable for making plastic molds ... Positive infinitely variable high speeds from 25 to 1600 R.P.M. in either direction directly on the main spindle ... 18 feeds ranging from .002 to .125 per revolution of spindle ... 24" x 36" table ... Oversize construction to inspire rigidity, strength and accuracy. Write for bulletin. Defiance Machine Works, Inc., Defiance, Ohio.

DEFIANCE
97 YEARS OF PRECISION MANUFACTURE

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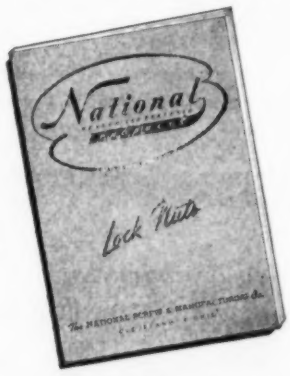
To help you select the right LOCK NUT



SEND for this new Lock Nut Catalog. It will be of real service. Lock Nuts made by "National" include 4 distinct types, to meet practically every requirement.

In addition to a complete line of standard fasteners, "National Screw" makes these specialties:

- Drake Lock Nuts
- Dynamic Lock Nuts
- Huglock Nuts
- Marsden Lock Nuts
- Lok Thred Studs
- Phillips Recessed Screws
- Clutch Head Screws
- Rosán Locking System
- Hi-Shear Rivet Pins & Collars
- Laminar Flow Screws
- Davis Blind Fasteners
- Place Bolts
- Scrivets
- Sems

National Technical Service is ready to help you on any fastener problem.

THE NATIONAL SCREW & MFG. CO., CLEVELAND 4, O.

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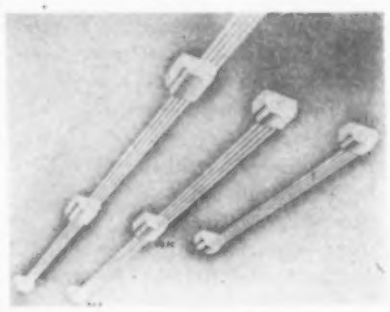
FLUORESCENT LAMPS



Instant starting and 10,000-hour rated lamp life are features of Slim fluorescent lamps. These hot cathode lamps are said to have 20 per cent increased light efficiency over cold cathode units. They are available in standard 8-foot lengths and when used with Duro Test ballast they are rated at 35 watts.

Units are equipped with push type single contact bases which are easily inserted in safety spring tension sockets. Lamps are available in all standard colors and will operate singly or in multiple. No starters are required. Made by **Duro Test Corp.**, Dept. 15, North Bergen, N. J.

▲ Mention Item NED-699 when writing ▲

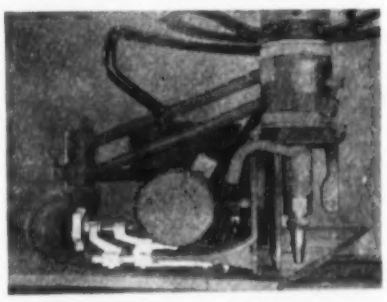
POSITIVE DRIVE TOOL HOLDER

Holes measuring 15/16-inch from center to center can be tapped on multiple spindle machines with this Neoprene mounted Tool-Flex tool holder. Unit has Acme threaded shanks for use in multiple spindle tapping operations. Shank, collet, oil resistant Neoprene mounting and locking ring comprise tool holder.

Neoprene mounting is used to minimize tap breakage and to compensate for misalignment. Bell mouthing and over-sized holes are claimed to be eliminated by full floating feature of mounting. All parts are alloy steel precision ground and heat treated. Made by **Burg Tool Mfg. Co.**, 5028 W. Jefferson Blvd., Los Angeles 16, Calif.

▲ Mention Item NED-700 when writing ▲

CIRCLE CUTTING ATTACHMENT



When mounted on Oxweld CM-16 oxy-acetylene portable shape cutting machine, this Under-the-Motor circle cutting attachment makes it possible to cut circles from 2-1/2 to 9 inches in radius. Principal advantage of unit is that metal can be utilized that ordinarily would be scrapped. Cutting can be performed to extreme edge of plate.

Radius of circle to be cut is regulated by means of adjusting screw. Circles above 9 inches in radius can be cut to edge of plate without attachment. Once unit is installed, normal cutting procedures are followed. Made by **Linde Air Products Co.**, 30 E. 42nd St., New York 17, N. Y.

▲ Mention Item NED-701 when writing ▲

. . that Glossy Finish is
PLASTIGLAZE

1. It produces a finish resembling fired ceramic glaze.
2. It can be applied over lacquer . . oil . . most any type of color (water or ink) without bleeding.
3. It impregnates material to harden . . toughen . . preserve.
4. It repels water . . does not peel or chip.

INCIDENTALLY . . ART OBJECTS ARE CAST BEST IN A *Plastiflex* MOLD FROM *Plastitool*.

For information regarding these particular plastic products write . . .

CALRESIN CORPORATION
CULVER CITY, CALIFORNIA
PLASTIFLEX · PLASTITOOL · PLASTIFORM · PLASTIGLAZE

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STURTEVANT AIR SEPARATORS

Up Production of Fines... Provide More Uniform Fines... at Lower Cost per Ton

These efficient separators may be used for removing dust from materials already milled or in their natural state . . . or in a "closed-circuit" with a grinder where they separate and remove the finished product from the pulverizer.

Sturtevant Air Separators are easy to operate. Quick, simple adjustments provide a range of fineness from 40 to 325 mesh. They increase finished product output up to 300% . . . cut power costs as much as 50%. They are available in capacities from ¼ ton to 50 ton per hour. Write for complete information and bulletin 087, today.

STURTEVANT MILL COMPANY
114 Clayton St., Boston 22, Mass.

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Whatever the face— We have the fit with
WILLSON Safety Spectacles

★Accurate fit for every worker—whatever his type of face—is easily possible with Willson's 20 sizes. Remember, correct fit is necessary for maximum safety. For day-long comfort, too, SUPER-TOUGH* lenses ward off impact hazards. Each lens is thoroughly tested. Examples: Polariscope test for uniformity of heat treatment; Federal drop-ball test for impact resistance. Choose from two styles, "A", without sideshields, "AS", with sideshields, (plastic, Sonite, leather, or wire screen). For glare protection, too, specify lenses in Willsonite green.
*T. M. Reg. U.S. Pat. Off.

GOGGLES · RESPIRATORS · GAS MASKS · HELMETS

For help with your eye-protection problems, get in touch with your Willson distributor or write direct.

DOUBLE WILLSON PRODUCTS INCORPORATED
Established 1870
113 N. SECOND STREET, READING, PA.

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KAM-GRIP Drill Jigs step up production to meet today's rising labor and material costs on all single-spindle cross-drilling operations.

Complete in itself, simple low-cost and interchangeable Anvils and Drill Bushings broaden the scope of each **KAM-GRIP** Drill Jig to handle unlimited combinations of stock and drill sizes.

Write today for new **KAM-GRIP MANUAL** on latest specifications and application data.

MANUFACTURERS ENGINEERING SERVICE
416 SECURITY BANK BLDG. · TOLEDO, OHIO

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Step Taper Bore

COMPLETED IN

ONE MINUTE

. . . using Special

DAVIS Boring Bar with Adjustable Cutters

Greater production and higher accuracy may be obtained in complicated boring operations by employing *designed-for-the-job* Davis boring bars and cutters. In this application, taper bores of 15° and 8½° are made simultaneously by means of a special Davis boring bar.

SEQUENCE OF OPERATIONS
(Over-all machining Time 20 Minutes)

1. Drill 1½" hole
2. Bore 15° and 8½° taper with Davis tool
3. Bore 2⅜" diameter with fly cutter
4. Chamfer, ream and face
5. Drill 27/64" hole
6. Form
7. Cut off

***How to* INCREASE Your Boring Production**

Standard and special Davis boring tools make it possible to profitably combine boring, reaming, facing, counter-boring, chamfering, recessing and similar operations on both horizontal and vertical machines.

Competent Davis engineers will assist you in selecting the type of tooling to assure the results you require.

FREE DATA ON DAVIS STANDARD AND SPECIAL BORING TOOLS — Learn how Davis boring equipment can help solve your boring problems. Write today for Production Data Folder.

DAVIS BORING TOOLS

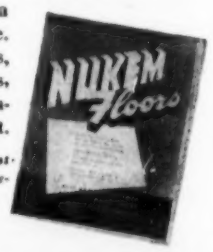
DAVIS BORING TOOL DIVISION OF
Giddings & Lewis Machine Tool Company
166 Doty Street, Fond du Lac, Wisconsin

▲ Mention Item NED-706 when writing ▲

NUKEM Acid-Proof FLOORS
stand up under the
Toughest **KIND OF SERVICE**

Regardless of the particular conditions in your plant, one of the several types of NUKEM Acid-proof floor construction will solve your problem. For NUKEM floors are immune to all commercial acids, alkalies and solvents; are leak-proof and wear-proof; yet they are attractive and easy to keep clean. The first cost of a NUKEM floor is the last cost.

Wherever a corrosive condition exists, a NUKEM floor will end floor trouble. Chemical Plants, Laboratories, Steel Mills, Galvanizing Plants, Food Processing Plants, Dairies, Ice Cream Plants and similar industries appreciate NUKEM floors most.

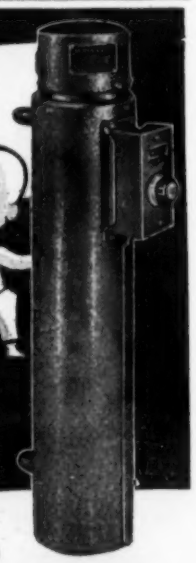


Write or wire for the NUKEM representative nearest you. You'll find him helpful. Also ask for booklet describing NUKEM acid-proof construction.

NUKEM Products CORPORATION
127 COLGATE AVENUE, BUFFALO 20, N. Y.

▲ Mention Item NED-707 when writing ▲

A lot of HEAT in a small package



CHROMALOX *Electric* **CIRCULATION HEATERS**

FOR HEATING WATER · PRE-HEATING FUEL OILS · SUPER-HEATING STEAM

CHROMALOX Electric Circulation Heaters are used as water heaters for connecting to tanks and kettles. They are used to pre-heat low grade fuel oils, heat oil-jacketed processing equipment and super-heat steam. Manual control or automatic thermostats assure accurate temperatures. Installation and operation costs are low. Capacities from 1-KW to 15-KW.

CHROMALOX Application Engineers will be glad to show you how these Circulation Heaters and other CHROMALOX Electric Heaters can do many heating jobs more efficiently and more economically.

FOR MORE DATA, request Catalog 42 and "100-Ways to Apply Electric Heat" Booklet.

EDWIN L. WIEGAND CO., 7509 THOMAS BLVD., PITTSBURGH 8, PA.

See other advertisement on page 30

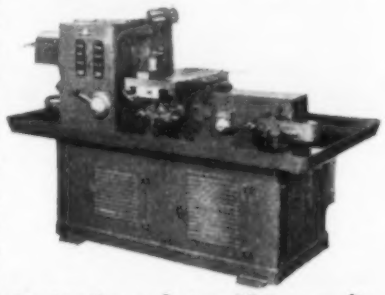
CHROMALOX IB-48

ELECTRIC HEAT FOR MODERN INDUSTRY

▲ Mention Item NED-708 when writing ▲

SEMIAUTOMATIC LATHE

Suitable for production greater than that possible with manually operated machines, model No. 650 lathe is semiautomatic. This single spindle machine is equipped with up to 7½-horsepower four-speed motor, hydraulic feeds and either single or double action cross slides, as desired. Pushbutton control station is located conveniently for operator. Hydraulically operated cross slide provides automatic cycle of fast approach, feed, dwell, fast retraction and stop. Motor supplies direct drive for ball bearing mounted spindle which is equipped with push-out or draw-in collet operated by hydraulic cylinder.



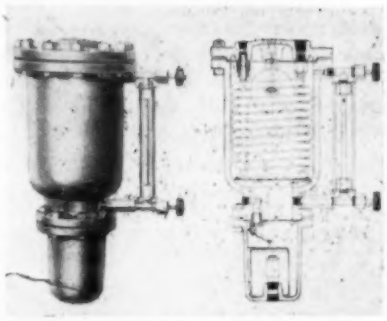
Cross slide is controlled through action of solenoid valve and lever. Cross slide can be controlled manually also. Hydraulic pump is driven by 2-horsepower motor and is located in base of machine. Automatic chuck is equipped with drawback collet with adjustable work stop in spindle. Centrifugal coolant pump, driven by ⅛-horsepower motor, is controlled by same pushbutton that controls hydraulic pump.

In many cases, two machines can be handled by single operator, approximately doubling production figures per man hour. Machine is particularly suitable for work where fully automatic or multiple spindle machines are not justified economically. Made by Oster Mfg Co., 2066 E. 61st Pl. Cleveland 3, O.

▲ Mention Item NED-709 when writing ▲

REFRIGERANT GAS PURGER

Gas purger for automatically separating and discharging noncondensible impurities in refrigerating system gas is claimed to operate at efficiencies ranging from 98 to 100 per cent. Unit is similar to former models except that refrigerating jacket has been replaced by internal coil. Use of coil increases condensing surface available for separating noncondensible gases from refrigerant by approximately 50 per cent. In addition, device incorporates noncondensible gas discharge mechanism in which ball float, used to activate valve, has been enlarged and valve itself improved.



Style No. 270 has semi-steel body for pressures up to 200 pounds per square inch. No. 870 has forged steel body for pressures up to 300 pounds per square inch. It is adaptable to systems of practically all capacities and operates with equal effeciency regardless of whether system pressure is above or below atmospheric pressure. Unit can be used on all commercial refrigerants including ammonia, Freon, carbon dioxide, and sulphur dioxide used in compression type systems. Use of purger reduces loss of gas to minimum. It can be used also in petroleum and chemical industries in gas purification processes. Made by Armstrong Machine Works, 819 Maple St., Three Rivers, Mich.

▲ Mention Item NED-710 when writing ▲

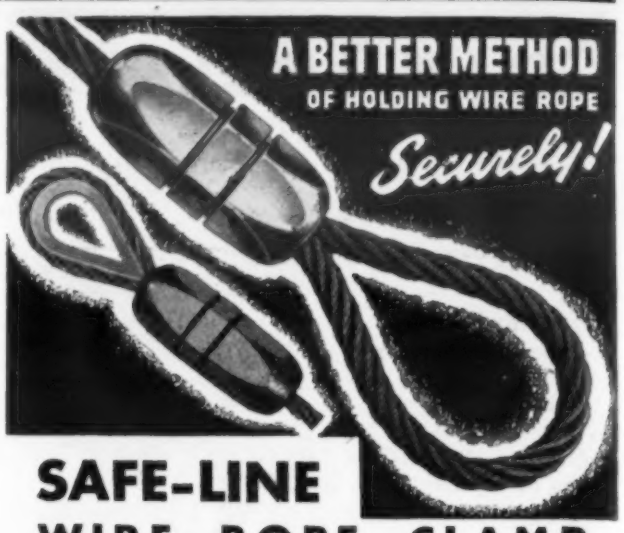
Beverage cases from first floor move to upper floors for storage by Logan Belts. Cases shunted to other belts to serve wide area.

. . . say experienced plant men. Savings are obvious in belt conveyor installation above compared to costly man-truck-elevator-up-and-back round trip methods. Conveyors make 3-story building as efficient as 1-story plant. Write for literature.

Logan Conveyors

LOGAN CO., INC., 215 CABEL ST., LOUISVILLE 6, KY.

▲ Mention Item NED-711 when writing ▲



A BETTER METHOD OF HOLDING WIRE ROPE *Securely!*

SAFE-LINE WIRE ROPE CLAMP

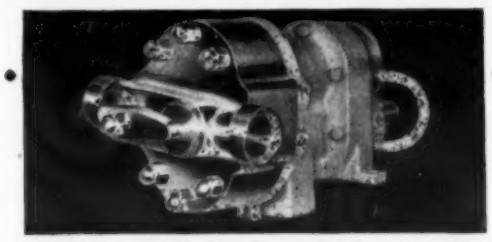
FOR ROPE SIZES ¼" TO ⅜"

- *Eliminates Splicing and Serving*
- *Easy to Use, Easy to Re-adjust*
- *Outpulls Strongest Rope—Never Slips*
- *Economical—Use Again and Again*
- *Safe—Prevents Injury, Mental Hazards*
- *Replacement Guarantee Against Breakage*

WRITE FOR DESCRIPTIVE PRICE LIST FOLDER

NATIONAL PRODUCTION COMPANY
4557 ST. JEAN AVENUE • DETROIT 13, MICHIGAN

▲ Mention Item NED-712 when writing ▲



FLOW-MASTER "Commander" — 500-4000 G.P.H., up to 750 psi. Incorporates all the unique FLOW-MASTER features.

New

FLOW-MASTER PUMPS

The new stainless FLOW-MASTERS are the finest pumps available to American Industry because they maintain volumetric efficiency longer, automatically compensate for normal wear.

These and other FLOW-MASTER features are explained in detail in the new Marco Catalog No. 25 V. Send for a copy.

MARCO COMPANY Inc.
Third & Church Streets Wilmington 50, Del.

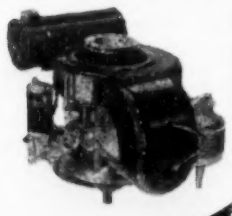
▲ Mention Item NED-713 when writing ▲

LIGHTWEIGHT GASOLINE ENGINES

New Source for Engines

McCulloch Motors Corp., in a new plant covering 75,000 square feet, is mass-producing die-cast light-weight gasoline engines. Current production includes 2-cycle models from 2½ to 4 hp.

Design Features: Separate pressure oil system eliminates need to mix oil with gas; patented "reverse-flow" scavenging improves starting and idling; fuel injection optional on some models.



Illustrated Brochure Available

TYPICAL SERIES 1200 ENGINE

Model 1200D, developed for vertical-power drives. Develops 2.5 hp at 2500 rpm rated speed, yet weighs only 24 pounds.

McCULLOCH MOTORS CORPORATION

6101 WEST CENTURY BLVD.
LOS ANGELES 45, CALIFORNIA

▲ Mention Item NED-714 when writing ▲

FACTS to help you build better products

The new Plymetl bulletin offers the designer and engineer valuable information about Haskelite structural materials. These materials help you design better, more salable products, both consumer and industrial.

Plymetl may be new to you — but it is not a new product. Twenty-five years of actual production and application have proved that Plymetl is dependable.

This new bulletin will tell you what Plymetl is, what it does and how and where it may be used. It describes many of the different types of Plymetl. It contains fabricating, finishing and fastening facts.

To many, this new bulletin will "arrow" the way to lower manufacturing costs. Plan and Profit with Plymetl. Write for your free copy today.

HASKELITE

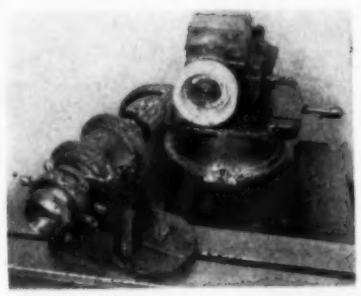
MANUFACTURING CORP.

Dept. ED-1, Grand Rapids 2, Mich.

New York Cleveland St. Louis Chicago
Philadelphia Detroit Los Angeles
In Canada: Railway & Power Engineering Corp., Ltd.

▲ Mention Item NED-715 when writing ▲

Axial Relief GRINDING FIXTURE



NEW MULTI-PURPOSE FIXTURE

HERE'S a fixture that will save you the expense of buying special duty machines for such work as grinding cutting edges, steps, flutes and chip relief on milling cutters, burring tools, counterbores, countersinks, end mills, reamers, drills and taps.

All adjustments simple, visual and external. Instantly adjusted to right or left hand. Axial relief automatically equalized on all flutes. Can be used on surface grinders as well as cutter grinders. Performs most jobs with standard grinding wheels.

Send for literature explaining simplicity of operation and illustrating typical applications.

WRITE FOR *Literature*

GOVRO-NELSON CO.

1931 Antoinette Detroit 8, Mich.

▲ Mention Item NED-716 when writing ▲

PROVED DAILY IN INDUSTRIAL USE

safer • shock-absorbing • skidproof • resilient

RUBBER LINK

FLOOR MATTING

NON-SKID REDUCES FATIGUE REDUCES BREAKAGE

Now . . . at last . . . a genuinely efficient, reversible floor matting! The attention of all industrial men is directed to L-CO rubber and fabric link matting for its thousand and one uses. Providing dry, almost indestructible, skidproof, shock-absorbing underfooting . . . L-CO cushions body-tiring floor vibration. Built to fit YOUR SPECIAL REQUIREMENTS. Weight 2¼ lbs. per sq. ft.

DISTRIBUTORS ATTENTION:

Generous profit-making discounts. Write, wire or phone for details.

The LOEWENTHAL COMPANY

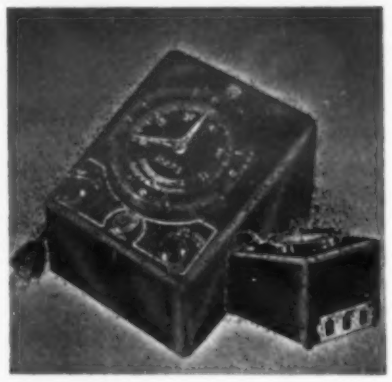
188 W. Randolph Street, Chicago 1, Ill.

FACTORY—Akron, Ohio

L-CO RUBBER LINK-FLOOR MATTING

▲ Mention Item NED-717 when writing ▲

SYNCHRONOUS TIMER



Designed for direct control of loads up to 1 kilowatt at 115 volts 60 cycles, this synchronous motored Mars timer provides flexible control of wide range of industrial timing operations. It is equipped with multiple circuit switching whereby one electrical circuit is energized for preset time interval while another circuit is simultaneously de-energized for same interval. Standard receptacles are built into instrument case for connection of controlled circuits.

Rapid selection of any time interval from 1 to 75 seconds can be made on rim set dial located on control panel. One luminous hand indicates interval for which timer is set and another shows elapsed time during entire cycle. Cycle is started by pushbutton. Momentary contact switch can be provided for remote control. When cycle is completed, switching circuits are restored automatically to initial state and elapsed time indicator resets to zero.

Manual switch provides control of operation during adjustments or when it is necessary to synchronize operation to timer. Preset time can be extended or shortened during operation without disturbing timing interval. Power switch turns off all power when unit is not in use. Timer is housed in plastic case. Six-foot rubber cord and plug facilitate connection to electric outlet. Made by **Lancaster Products**, South Lancaster, Mass.

▲ Mention Item NED-718 when writing ▲

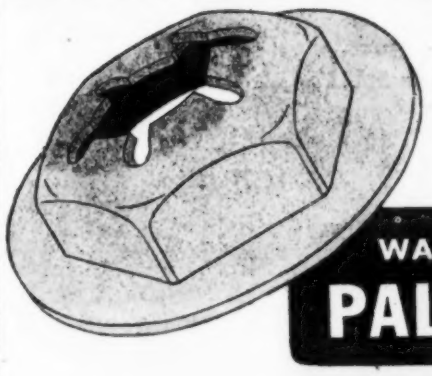
SELF-FLARING TUBE FITTING

Embodying advantages of both compression and flared fittings, this Uniflare two-piece fitting is self-flaring and applicable to many types of tubing. It can be used with tubing of various metals, including copper, aluminum, Monel, plastic, Bundyweld and varieties of steel within wide range of wall thicknesses. Units are available in sizes ranging from 1/8 to 3/4-inch in all usual commercial shapes.

When employed, plain end tubing is inserted in fitting and made up in conventional manner. Tube connection is self-extruded and self-flared by wrench action during makeup. Nut, body and thrust collar combine to produce same positive action as an extrusion press. Thrust collar shears from nut when wrench pressure is applied. Tube is shaped to 37-degree flare to make sound joint. Extrusion and coining action of parts produce leakproof joint which is reinforced against pressure and vibration. Joint can be made numerous times without danger of damage to original flared end of tube and without losing positive seal. Made by Brockway Co., Naugatuck, Conn.

▲ Mention Item NED-719 when writing ▲

Sheet Metal Assembly —Better —Faster at Lower Cost with



WASHER TYPE **PALNUTS**

Handle ONE part *instead of THREE*

These inexpensive one-piece, self-locking Palnuts perform the same function as regular nut, lockwasher and plain washer combined. You not only replace three parts with a single Palnut, but power drivers may be used to further speed up assembly. Special sockets for power drivers pick up, spin on and tighten Palnuts in one operation. Once tightened, Palnuts stay tight under vibration — assured by their exclusive double locking spring action. Send for samples. Ask for engineering literature on entire Palnut fastening line.

THE PALNUT COMPANY

45 Cordier Street Irvington 11, N. J.

▲ Mention Item NED-720 when writing ▲

SAFETY for men and material with

Elwell-Parker Trucks

- **POSITIVE "ON-OFF" CONTROL**—Truck cannot move unless operator stands on *both* pedals. Likewise it stops when he steps off.
- **SEPARATE OPERATION OF POWER AND BRAKE**—Invaluable when starting heavy loads on ramps, since power is applied before brake is gradually released. No fuses in power circuit but Elwell-Parker motors take the full electric current the battery supplies.
- **SAFETY CONTROL**—Drive controller turns to "off" the moment operator releases handle. Limit switches and electric brakes automatically control, and overload slip clutches protect the other motors.

Underwriters' Laboratories' UL Seal, ease of handling and extra ruggedness are other reasons why Elwell-Parker users *forget* truck safety problems. Call in the nearest Elwell-Parker man for the answer to your specific need.

THE ELWELL-PARKER ELECTRIC COMPANY

4502 St. Clair Ave. • Cleveland 14, Ohio

▲ Mention Item NED-721 when writing ▲

QUICK SOLUTION

to Humidity Problems!

Wherever humidity must be held constant—or moisture content of materials must not vary—the wide range of Foxboro Humidity Instruments offers an easy means of getting results.

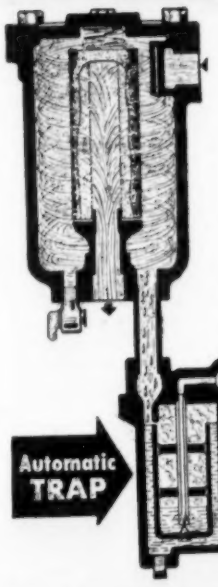
Direct-reading Foxboro Recorders give exact knowledge of conditions at all times. Trouble-free Foxboro Humidity Controllers will maintain desired conditions accurately, automatically. Available in membrane or wet-and-dry bulb types controllers either electric or pneumatic-operated.

Write for complete Bulletin 188. The Foxboro Company, 134 Neponset Ave., Foxboro, Mass., U. S. A.

FOXBORO Reg. U. S. Pat. Off. HUMIDITY INSTRUMENTS

▲ Mention Item NED-722 when writing ▲

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES

OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 105.

R. P. ADAMS CO., INC.

63 Chicago St. • Buffalo, N. Y.

ADAMS *Poro-Stone* AIR FILTER

▲ Mention Item NED-723 when writing ▲

MOLYBDIC OXIDE—BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE" CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

Climax Molybdenum Company
500 Fifth Avenue · New York City

▲ Mention Item NED-726 when writing ▲

VERTICAL INDUCTION MOTOR

Hollow shaft vertical motor, designed for pump drives, has been added to line of Tri-Clad induction motors. Motors are available in ratings from 1 to 500 horsepower and in all speeds and frequencies. Units are suitable for use on irrigation projects, deep well turbine pumps, municipal and industrial water supply projects, mine dewatering pumps and process industry liquid pumps.

Motors rated 10 horsepower at 1800 revolutions per minute and larger have controlled lubrication system which allows proper amount of oil to flow through bearings. Large oil reservoir, cast integral with motor end shields, has sufficient capacity to allow oil to cool and recover before being recirculated. Motors rated at 7-1/2 horsepower at 1800 revolutions per minute and smaller have grease lubricated bearings.

Self-release coupling on motors prevents damage to pump or motor caused by reversal. Motor can be lined up accurately and easily from top. Adjustment of pump shaft is accomplished by means of locking nut on top of coupling. Rotor windings in all ratings provide suitable starting torque with low current needed for full voltage starting. Made by **General Electric Co.**, Schenectady 5, N. Y.

▲ Mention Item NED-729 when writing ▲

FOR FASTER, EASIER METAL SAWING
. . . Use
BARNES Band Saws

Send for your free copy of new Barnes Handbook of Metal Sawing. Helpful information and recommendations for increasing your metal cutting efficiency.

ESTABLISHED 1919
W. O. BARNES CO., INC.
DETROIT 14, MICHIGAN

▲ Mention Item NED-732 when writing ▲

NOW! HERE'S HOW TO QUICKLY AND EASILY BURR HOLES ON PARTS LIKE THESE—

Remove Burrs This Sure Way, Faster, Better, Easier!

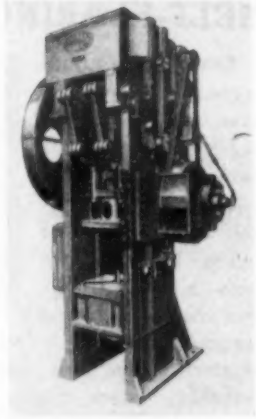
With the New Nobur Tool you can burr faster — improve the finish of the deburred parts and lower production costs by eliminating burring as a bench operation. This New Nobur Tool speeds the burring of holes — and makes burring a fast, easy machine operation. It speeds production by cutting burring time to an absolute minimum.

The Nobur Tool works like a drill; it can be used in the spindle of any machine. The operator works with complete safety at all times and parts can be deburred as fast as they can be handled. All burrs are instantly removed — a double-edged cutting blade deburrs the edges of holes in flat or curved surfaces, of single or multi-walled parts, smoothly and accurately. The clean cutting action of the Nobur Tool will pass the most severe of inspections — it will help to eliminate reworks and repeats during assembly. Nobur Tool available in 1/16" progressive sizes from 3/16" to 1" in diameter. Write today for new complete burring folder.

NOBUR MANUFACTURING COMPANY
910 NORTH ORANGE DRIVE, LOS ANGELES 38, CALIF.

▲ Mention Item NED-727 when writing ▲

SINGLE CRANK TOGGLE PRESS



Wide range of deep drawing operations on steel, brass, copper, alumium and other metals can be performed with improved line of single crank toggle presses. Units are available in eight sizes having from 4-1/2 to 7-inch shaft diameter and from 8-1/2 to 24-1/2-inch stroke length. These dimensions are the same as in previous models, thereby permitting interchange of tools.

Steel weldment frame construction results in weight savings and reduced floor requirements as compared to previous models. Amount of bearing overhang is reduced and toggle driving mechanism provides crosshead with long guides at position where most needed. Clutch is single disk friction type with one-station electric pushbutton control. Air brake for stopping flywheel is included. Standard equipment includes radially T-slotted bolster plates, and direct-connected adjustable bottom lift outs to leave space between uprights free and clear. Gearing is guarded and is located approximately 8 feet above floor. Manifold lubrication system, with metal tube leading to each bearing, is standard equipment and can be replaced by semi-automatic or automatic lubricators if desired. Made by **E. W. Bliss Co.**, Dept. NED 450 Amsterdam St., Detroit 2, Mich.

▲ Mention Item NED-730 when writing ▲

A-F PORTABLE CONVEYORS

LESS FATIGUE-MORE PRODUCTION

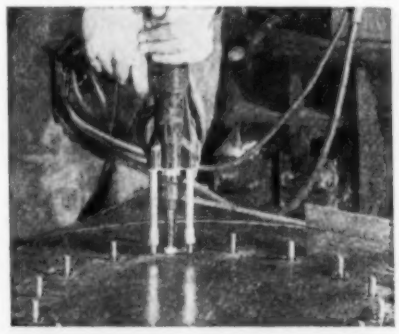
THIS A-F Portable Belt Conveyor quickly loads cartons into front end of transport truck, moving back as truck is filled. Saves time and handling, reduces fatigue, assures faster loading, quicker delivery. Whether your company needs a small A-F Portable Conveyor or a completely co-ordinated plant-wide conveyor system for handling materials and products write for literature today.

THE ALVEY FERGUSON CO.
Offices in Principal Cities 31 Disney St., Cincinnati 9, Ohio

CONVEYING EQUIPMENT
Alvey-Ferguson
METAL PRODUCTS CLEANING & FINISHING EQUIPMENT

▲ Mention Item NED-733 when writing ▲

ELIMINATE DRILLING, TAPPING, HAND WELDING *with*



NELSON Automatic STUD WELDING

THE EQUIPMENT: The fully-portable 5 lb. Nelson "gun" handles studs from 1/8" through 3/4" in diameter, up to 8" long. Timer control unit furnished with gun automatically controls weld cycle; operator merely loads stud in gun, contacts weld surface, and pulls trigger. No skill or experience required; single operator can average 100 to 200 stud welds per hour. Gun and control unit operate from any suitable d.c. welding generator.

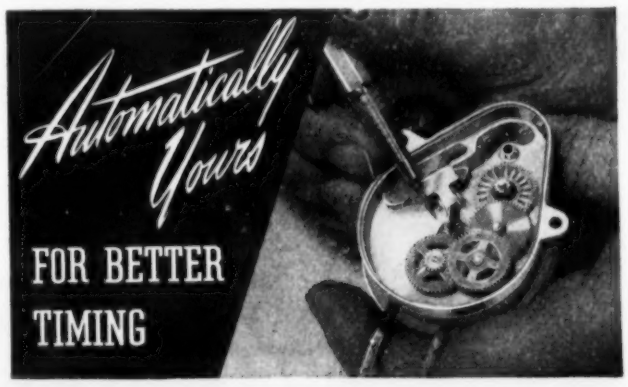
THE STUDS: Nelson flux-filled studs are available in plain or threaded types in all standard sizes, plus scores of special types such as eye and "J" shapes, female (hollow) studs, rivet studs, etc.

THE RESULTS: Elimination of punching, drilling, tapping, hand-welding or similar slow stud installation operations speeds production, cuts costs. Strength of weld exceeds that of the stud, and all welds are uniform.

Write or Wire for Free Literature and Data

NELSON SALES CORPORATION
2711 Toledo Ave., Lorain, Ohio

▲ Mention Item NED-728 when writing ▲



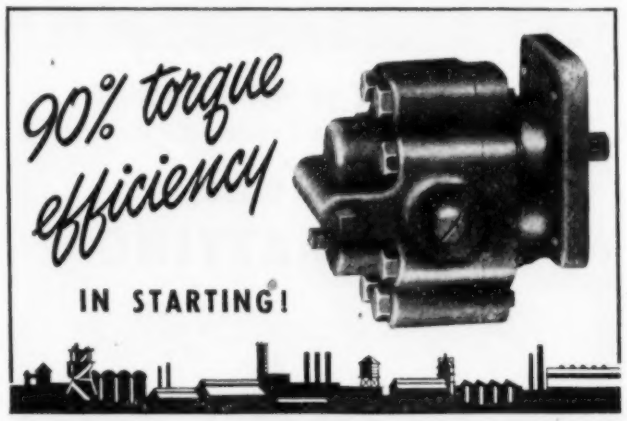
HAYDON Automatic Reset . . .

For automatic resetting, HAYDON has a magnetically operated counterbalance gear shift that provides automatic reset regardless of the mounting position. This is available in speeds from 15 R.P.M. to one revolution in 10 minutes.

Write for the new HAYDON CATALOG today.

TIMING ENGINEERING SERVICE
Haydon
MANUFACTURING COMPANY
INCORPORATED
Forestville, Connecticut

▲ Mention Item NED-731 when writing ▲



. . . with this new *Pesco* Hydraulic Motor

If the operation of your equipment calls for the use of a hydraulic motor that can deliver better than 90 per cent torque efficiency in starting, it will pay you to get full information about this new Pesco Hydraulic Motor. It is non-stalling, exceptionally light in weight, provides dual rotation, smooth operation and long life. Built with minimum parts in sizes from 50 to 600 pounds inches torque, it will operate at working pressures up to 1500 p.s.i. and at operating speeds from 0 to 4000 r.p.m. Write today to Dept. 27-N.

Pesco PRODUCTS DIVISION
BORG-WARNER CORPORATION
11610 Euclid Avenue
Cleveland 6, Ohio
MANUFACTURERS OF SUPERCHARGERS

▲ Mention Item NED-734 when writing ▲

"BUY GEORGE" SAID THE FOREMAN

THE P.A. DID . . . *and*

NOW . . . heavily laden tote boxes are rolled without effort onto "George's" back and easily transported throughout the plant. There are two sets of rollers; (1) to glide the load by handle leverage onto the truck . . . (2) to roll the truck to destination. Nothing simpler, nothing easier or safer . . . "George" is a rugged truck that saves energy and time. Some P.A.'s are buying by the dozen. "Buy George" yourself to solve plant toting problems. Ask for Bulletin NED.

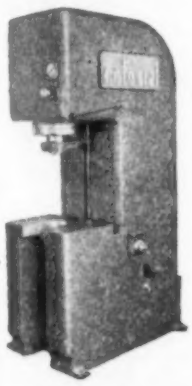
ROLOCK
INCORPORATED
FAIRFIELD, CONN.

▲ Mention Item NED-735 when writing ▲

HYDRAULIC PRESSES

If you need an hydraulic press in the range of 1 to 50 tons—for assembly work, for straightening, for broaching, forming, punching, for work on plastics or aluminum and magnesium, you'll find it in the COLONIAL line. "JUNIOR" Presses in bench or pedestal types (1 to 4 tons; Bulletin VJ-1); UTILITY Presses available with or without speed, pressure, and dual safety controls (4 to 10 tons; Bulletin VBS); ASSEMBLY Presses—available with speed and pressure control (10 to 50 tons; Bulletin PA); STRAIGHTENING Presses with single or dual rail (15 to 50 tons; Bulletin PS); also hydraulic POWER PRESSES custom designed to the job, with plain or special hydraulic circuits, indexing mechanisms, special fixtures, etc. Straightening and pull-down broaching attachments also available on smaller presses.

JUNIOR PRESS



ASSEMBLY PRESS

Write for Bulletins today.

colonial BROACH COMPANY
DETROIT 13, U.S.A.
Broaches · Broaching Machines · Broaching Equipment

▲ Mention Item NED-736 when writing ▲

STOCK CART

Saves steps and material handling. (1) Ideal for assembly line feeder (2) Stock Rooms (3) Tool Room (4) Shipping Department. 5" Rubber wheels. **$23.95**

IMMEDIATE DELIVERY!

SIZE
30" long
16" wide
32" ht. overall

STEEL STOOLS

All welded, non-breakable construction. Large 14". Square wood over steel seat. Steel back rest is comfortable and adjustable. Five sizes . . . 18", 22", 24", 26" and 30".

IMMEDIATE DELIVERY! **$4.65 ea.**

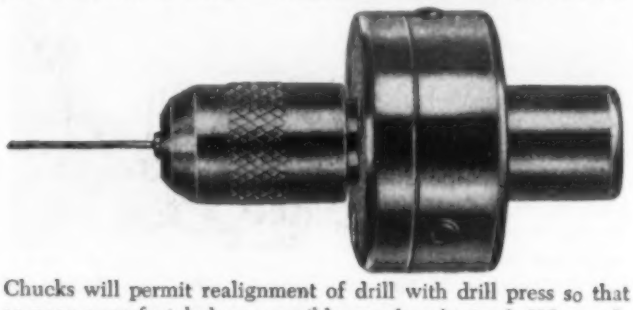
DEALER INQUIRIES INVITED!

CIE
CLARK INDUSTRIAL EQUIPMENT
1126 SPRING GARDEN ST. ST. 4-5050 PHILA. 23 PA.

▲ Mention Item NED-737 when writing ▲

ADJUSTABLE COLLET CHUCK

Capable of being adjusted to absolute concentricity, Micro drill chuck is available in two collet sizes, smaller size ranging from 0.005 to 0.025-inch and larger from 0.02 to 0.04-inch.



Chucks will permit realignment of drill with drill press so that as near a perfect hole as possible can be obtained. When adjusting chuck to drill spindle, straight rod about 0.02-inch diameter should be inserted and locked in collet. By adjusting screws, rod is brought into alignment and locked into position. Once alignment is made, it is necessary to realign chuck when new drills are used. Made by **Chicago-Latrobe Twist Drill Works,** 411 W. Ontario St., Chicago 10, Ill.

▲ Mention Item NED-738 when writing ▲

INDUSTRIAL TRUCK

Designed originally for stock yard use, this model A14V Shop Mule industrial truck has 2000-pound line pull vertical capstan winch and special trailer hitch. Unit is powered by 30.5-brake horsepower 4-cylinder model U4 International engine. Tractor can be equipped with cab, snow plow or rotary sweeper broom. Maximum drawbar effort of tractor is 2400 pounds. Truck can be used for moving heavy machinery, airport and railroad work, and pulling boats out of water. It can be furnished with 6000-pound line pull reversible drum winch mounted horizontally. Made by **W. F. Hebard & Co.,** 336 W. 37th St., Chicago 9, Ill.

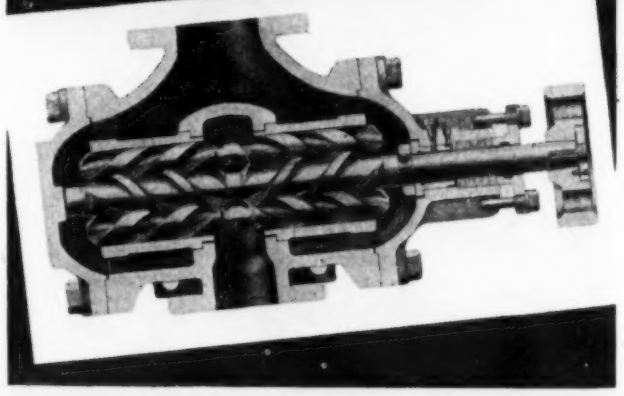
▲ Mention Item NED-739 when writing ▲

WELDERS' GOGGLES

Self-adjusting, Speedframe welders' goggles can be raised or lowered by nodding head. Unit consists of suitable goggles mounted in lightweight fiber headframe of headline design which holds goggles securely in either position without uncomfortable pressure on temples or bridge of nose. Device is adjustable in three directions by side and top straps and is held in desired position by simple screw type clamp. Speedframe can be furnished with welders' or chippers' goggles and with or without Coverglas lenses, as desired. Made by **Mine Safety Appliances Co.,** 220 N. Braddock Ave., Pittsburgh 8, Pa.

▲ Mention Item NED-740 when writing ▲

NO GEARS



The IMO PUMP requires no gears, because the fluid pumped is propelled from suction to discharge by the action of three intermeshing rotors. That's all there is to it—no gears, valves, vanes or pistons!

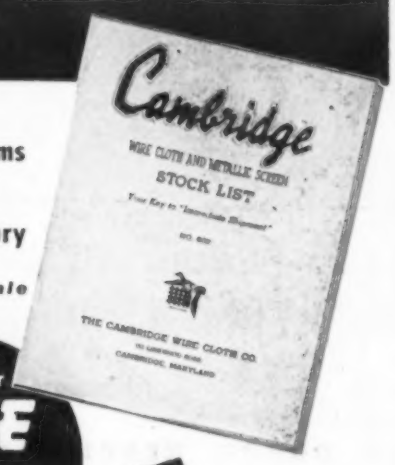
For simplicity, reliability and compactness select the IMO—for use in hydraulic service, governor service, lubrication service and other fluid handling services.

For further information send for catalog I-132

IMO PUMP DIVISION of the DE LAVAL STEAM TURBINE CO.
TRENTON 2, NEW JERSEY

▲ Mention Item NED-741 when writing ▲

Users of WIRE CLOTH and METALLIC SCREEN



Vitally Needed Items Available for Immediate Delivery

Subject to prior sale

Write for **FREE** copy of Cambridge Stock List No. 600

THE CAMBRIDGE WIRE CLOTH CO.
Cambridge 13, Maryland

▲ Mention Item NED-742 when writing ▲

This is a SPEED NUT*. . . . *and*

THIS is also a Speed Nut*!

Of course you recognize the Standard SPEED NUT, but just look at the "nightmare" our engineers dreamed up, to provide multiple fastening and operational functions in a single unit! It is used in the assembly of television transformers. It eliminates special mounting brackets and hard-to-handle threaded nuts and lock washers.

In addition to the widely-used standard types of SPEED NUTS, hundreds more are *functionally* designed to combine operations, eliminate parts, speed-up production, reduce final costs.

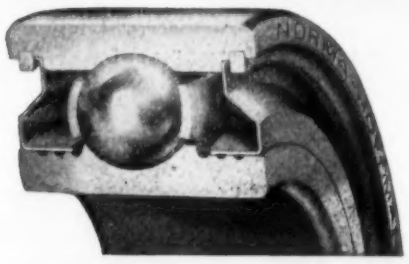
There must be some step in the assembly of your product where SPEED NUTS could reduce costs and improve your product. Send us your assembly details, or send in the parts for a complete fastening analysis . . . at no cost.

TINNERMAN PRODUCTS, INC.
2044 FULTON ROAD CLEVELAND 13, OHIO

Speed *Nuts*
FASTEST THING IN FASTENINGS

▲ Mention Item NED-743 when writing ▲

HELPS SOLVE DESIGN PROBLEMS



NORMA-HOFFMANN'S "CARTRIDGE" BEARING
PATENTED

How It Solves Design Problems:

- 100% more grease capacity.
- Factory grease packed; effective for years of service.
- Grease retained close to balls and raceway by built-in, wearless seals.
- Flanged seals, grease grooves keep grease in . . . keep dirt out.

Why It's a Better Bearing:

- Eliminates up to 10 machining operations and over 22 parts vs. some conventional mountings.
- Prevents slippage, peening, cocking.
- Increases shaft strength; reduces overhang.
- Improves appearance; provides compactness. No projecting screws nor plugs needed.

WRITE FOR CATALOGUE D

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONNECTICUT

▲ Mention Item NED-744 when writing ▲

DUPOR RESPIRATOR No. 1

A miniature mask that fits over nose only. Has 9 sq. in. filter area and Dupor patented valves to guard against stale air. Handy as a pair of glasses. Does not interfere with talking, eating, smoking. Fits the vest pocket. Weighs 1 oz. Sample sent $1.00 postpaid.

H. S. COVER
SOUTH BEND, INDIANA

▲ Mention Item NED-745 when writing ▲

NO LEAKS AFTER 2,000,000 OPERATIONS
Using **VALVAIR**

Diagram shows press operated by 2-pressure hydraulic valve with automatic H. P. inlet valve. Hydraulic valve controlled by Valvair knob-operated valve.

Standard Valvairs have operated more than 2,000,000 times at 100 lbs. pressure *without a leak*. . . . No metal seats; non-corrosive. No air flow restrictions. Many control combinations on either end. 5 sizes, ¼" to 1"; 3 types; 8 designs. Get facts and prices.

Ask for Bulletin "A-N".

Exclusive Features

VALVAIR CORPORATION • 454 Morgan Avenue, Akron 11, Ohio

Valvair 2-WAY 3-WAY 4-WAY

▲ Mention Item NED-746 when writing ▲

TRUCKS THAT CAN "TAKE IT" . . . . . *for years!*

Bal Built means well built! Vulcanized Fibre construction—tough—light weight—durable—Specially designed steel top rail—1/8" thick Fibre angles—Hardwood slat reinforcements—Seasoned oak bottom—Oil and grease proof—Easy rolling.

RACK, SHELF, BIN and SPECIAL TRUCKS—

Also Tote Boxes and Parts Boxes made in all sizes. Let us know quantity and size required. *Dependable Trucks and Boxes made for years.*

"SINCE 1898"

BAL "Built with a Conscience"

WILLIAM BAL CORPORATION
16 Johnson Street
Newark, 5, N. J.

▲ Mention Item NED-747 when writing ▲

MATERIALS TESTING DEVICE

Adaptable to production testing of metal castings, forgings or finished machined parts as well as plastic or ceramic parts, this ultrasonic materials tester will indicate presence of voids, cracks, laminations, poor bonds and other internal flaws. Instrument can be used to indicate changes of viscosity, compressibility and density of liquids when they significantly alter velocity of attenuation of ultrasonic transmission.

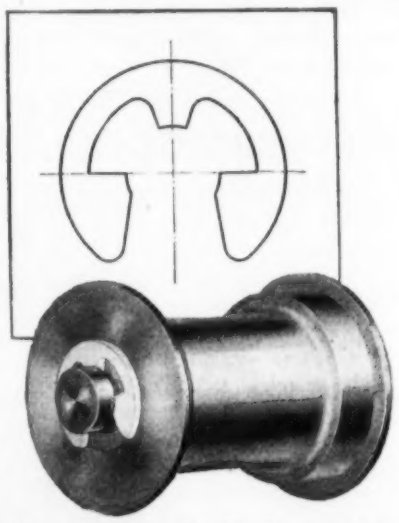
Unit is fully portable and self-contained. It provides direct reading and is easy to use. In operation, tester sends beam of ultrasonic waves through specimen being tested. Changes in amount of energy transmitted through specimen are indication of presence and extent of flaws. Testing is not affected by small changes in dimensions or position of test pieces. To examine regularly shaped pieces, two transducers are immersed in tank containing water and specimen inserted between them. Ultrasonic waves are sent through specimen and resulting reading on indicating instrument is compared with that for specimen shown to be sound by x-ray.

Instrument consists of complete wide band ultrasonic transmitting-receiving system having high frequency generator, crystal transducer, satisfactory medium such as water to transmit vibrations and indicator for inspection analysis. Made by General Electric Co., Schenectady 5, N. Y.

▲ Mention Item NED-748 when writing ▲

SHAFT RETAINING RING

Suited particularly for small shaft applications, E-shaped Truarc retaining rings provide unusually large and uniformly protruding shoulder on shafts ranging upward from 3/32-inch in diameter. Ring is sprung into comparatively deep groove and is designed to withstand considerable thrust loads. Three equally spaced protrusions form abutments in groove of shaft. Recesses between protrusions make ring sufficiently resilient to permit necessary spread for easy, quick assembly and disassembly without permanent set.



Requiring no special tools, rings are installed in radial direction. They are suitable for use where shaft is inaccessible in longitudinal direction. Applications include use in business machines, radios, household appliances, instruments and other equipment as well as for assembling chains, clevis pins, etc. Distributed by Truarc Sales Div., Waldes Kohinoor, Inc., 47-10 Austel Pl., Long Island City 1, N. Y.

▲ Mention Item NED-749 when writing ▲

LOADS CHECKED QUICKLY WITHOUT BREAKING THE CIRCUIT
CONVENIENT
ACCURATE
SAFE
A.C. or D.C.

Less than five seconds required to take an accurate current reading with the Tong Test Ammeter. Simple and easy to operate — merely snap the tongs around the electrical conductor. A time saver for every electrician. Ranges up to 800 amperes.

Write Today for Tong Test Bulletin ND-400

COLUMBIA ELECTRIC MFG. CO.
4525 HAMILTON AVE. - CLEVELAND 14, OHIO

COLUMBIA TONG TEST AMMETERS

▲ Mention Item NED-750 when writing ▲

This is the truck to take loads off your mind

CRESCENT PALLETIER FEATURES

- Operator spots and tiers without stirring from seat.
- All control levers at driver's fingertips.
- Full magnetic control protects against forced acceleration.
- Inspections and adjustments simplified by easy accessibility to all mechanisms.
- Minimum maintenance costs.

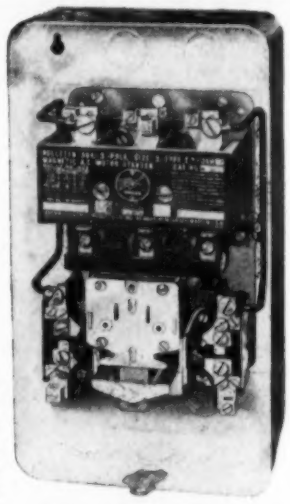
Send for free bulletins illustrating and listing specifications for 1000, 2000, 3000 and 4000-pound Crescent Electric Palletier.

CRESCENT TRUCK COMPANY
1030 Willow St., Lebanon, Pa.

ELECTRIC Crescent PALLETIER

▲ Mention Item NED-751 when writing ▲

IT'S WHAT'S *inside* THAT COUNTS!



Inside every motor starter in the FEDERAL NOARK complete line through Size 5, you will find evidence of top notch quality, engineering and precision manufacturing. FEDERAL NOARK starters are manufactured to give you long life, easy maintenance and dependable performance under the most grueling operating conditions. Specify FEDERAL NOARK Industrial Controls.

Federal Electric Products Co., Exec. Offices: 50 Paris St., Newark 5, N. J., Plants: Hartford, Conn., Newark, N. J., St. Louis, Mo.

Here's the "Works" of a Federal Noark Magnetic Motor Starter
• Double Break Silver Contacts
Accessible Stationary Contacts
Single Screw Movable Contacts
Heavy Arc Barriers for Strength
Ball Bearings & Movable Yoke
Non-Carbonizing Asbestos Base
Vertical Ball Bearing Action
Quick-Change Coils • Overload Relays — Hand & Automatic Reset
Front Mounted Accessible Heaters

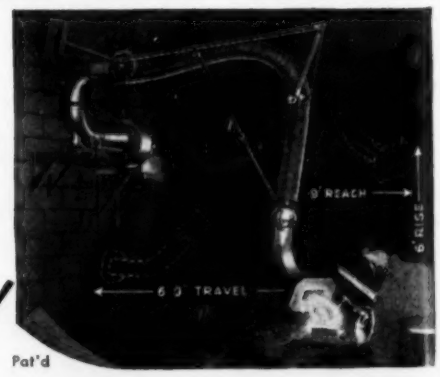
Federal NOARK
INDUSTRIAL CONTROLS
Federal Electric Products Co., Manufacturers of a Complete Line of Electrical Products Incl.: Motor Controls, Safety Switches, Circuit Breakers, Service Equipment, Panelboards

▲ Mention Item NED-752 when writing ▲

RUEMELIN Fume Collector

•

Removes WELDING FUMES *at the Source!*



Pat'd

No longer need employees inhale welding fumes. A Ruemelin Fume Collector solves the problem, quickly and efficiently. Produces powerful suction that draws out noxious gases, smoke and heat *at the source*. Guards employee health, resulting in less welder fatigue, therefore greater plant output. Clears shop air with minimum loss of building heat. Covers maximum welding territory, vertically, horizontally and by circle swing. Shipped assembled, easy to install. 9 ft. and 15 ft. sizes (radius of swing).

We gladly offer engineering service for your fume collector installation. Write for Bulletin 37-C.

RUEMELIN MFG. CO.
3883 N. PALMER STREET • MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS
SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS

▲ Mention Item NED-753 when writing ▲

STOP WORRYING ABOUT MOTOR MAINTENANCE

Multiple Range Jones Portable Hand Tachometer. (Single range also available).

16-page catalog upon request

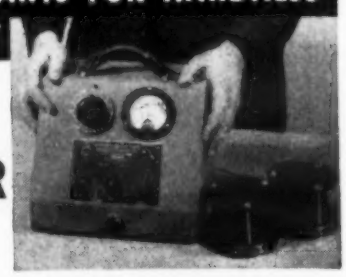
With the use of a JONES TACHOMETER you can quickly and accurately check and test the R.P.M. of your motors . . . tell immediately whether there is continuous or intermittent overloading that may cause failure . . . learn if there are any mechanical defects in time before breakdown.

Stop making your motor equipment a big maintenance problem. By checking the R.P.M. of your motors in time you can be assured of their running at desired maximum operating speeds instead of below peak productive capacity. Remember an ounce of prevention is worth a pound of cure. Tell us your requirement and we will recommend the type to meet your need.

JONES MOTROLA CORP.
439 FAIRFIELD AVENUE STAMFORD, CONN.

▲ Mention Item NED-754 when writing ▲

TEST FERROUS PARTS FOR HARDNESS
. . . at 1200 per hour



MAGNETIC COMPARATOR
Only $195
(plus coils)

TWO WEEK SHIPMENT can be given you now on this rapid, quality control instrument

Here's a quick method of controlling quality of ferrous metal parts, or separating mixed steels. Nondestructive and simple. Just preselect a standard of the same size and shape, and the Magnetic Comparator will detect differences in hardness, composition, heat-treatment . . . or any characteristics which alter the resistivity or magnetic properties.

Ideal for production line! You can check rods, bolts, springs and similar fabricated parts at the rate of 1200 per hour. Distinguishes between steels whose hardness differs by as little as two points Rockwell.

The Magnetic Comparator is a small, portable instrument. Compares the similarity of ferrous alloys by means of magnetic coils. Inspected parts must be identical in size and shape, but slight irregularities are acceptable. Not affected by surface conditions. Makes quality control quick and easy. **Write for bulletin GEA-4169, or order from your nearest G-E Office.** *Apparatus Department, General Electric Company, Schenectady, N. Y.*

GENERAL ELECTRIC

▲ Mention Item NED-755 when writing ▲

A New ROSS AIR VALVE
Piston Poppet Type
★ PILOT OPERATED • SOLENOID CONTROLLED ★

- ✔ FAST OPERATING as high as 400 cycles per minute.
- ✔ FAST EXHAUST minimum restrictions to air flow.
- ✔ POSITIVE SEAL by line pressure.
- ✔ SIMPLICITY OF DESIGN removing and plug permits replacement of piston poppet assembly—no need to disturb piping or to remove valve from position—no "down time."
- ✔ CURRENT consumption 1.2 amps. at 110 volts—60 cycle.
- ✔ SMALL and COMPACT
- ✔ ALL PARTS non-corrosive metals.
- ✔ ALL PARTS INTERCHANGEABLE

FOUR-WAY ⅜" Capacity

Available in:—
- THREE-WAY *normally open, or normally closed*
- FOUR-WAY *and*
- FOUR-WAY, *Five port. may be had in ¼", ⅜", ½" and ¾" pipe size*

ROSS Air Operated VALVES
★ A TYPE AND SIZE FOR EVERY PURPOSE ★ OVER 100 DIFFERENT MODELS ★ THE BRIDLE FOR AIR HORSEPOWER

ROSS Operating VALVE CO.
6469 Epworth Blvd. Detroit 10, Mich.

▲ Mention Item NED-756 when writing ▲

SMALL ROLLER

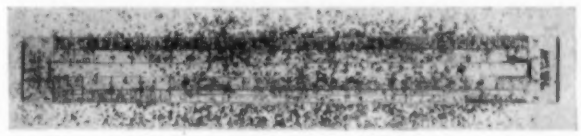
Weighing up to 1500 pounds, Moto-Roller small gasoline engine driven roller is suitable for rolling asphalt floors and driveways, lawns, fairways and similar surfaces. Air cooled gasoline engine is rated 6 horsepower at 1600 revolutions per minute. Drive to main roller is through chain from transmission which is provided with forward and reverse gear. Steering is accomplished by manipulating hand lever which turns front roller. Front roller is divided into two parts and mounted on rigid bracket.

When rollers are filled with water, unit weighs 1500 pounds. Rollers are equipped with scrapers. Water tank is provided to supply water for keeping main roller wet when desired. Larger models weighing up to 2 and 3 tons are available also. Made by Steel Equipment Co., 2890 E. 83rd St., Cleveland 4, O.

▲ Mention Item NED-757 when writing ▲

PLASTIC DRAFTING SCALE

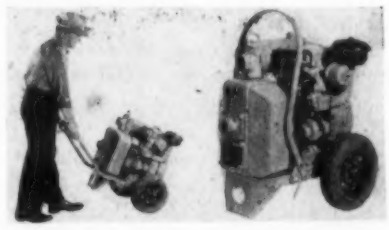
Eight different scales are incorporated on one side of this Vant Rule transparent plastic drafting scale. Calibrations of ⅛, ¼, ⅜, ½, ¾, 1, 1½ and 3 inches per foot are indicated.



Figures are printed in red to facilitate easy reading when rule is laid against black and white drawings or blue prints. Rule is made of heavy clear plastic and is 0.125-inch thick. Overall length is 13½ inches and scales read to 12 inches. Rule is furnished complete with case. Price is $2. Made by Stewart-Jackson Instrument Co., 215 W. Seventh St., Los Angeles 14, Calif.

▲ Mention Item NED-758 when writing ▲

CENTRIFUGAL PUMPS



Pump body of this improved Rex self-priming centrifugal pump is press formed of Armco ingot iron which is highly resistant to corrosion. Another advantage of design is savings in weight over former model (*Item NED-2248 May '42*). In the 2-inch size, weight saving is claimed to be 90 pounds over cast iron design.

Press formed body resists cracking or shattering under heavy loads or in freezing weather. It can be repaired readily by welding. Smooth surface of pump and press formed volute design result in increased efficiency of pump. Made by Chain Belt Co., 1686 W. Bruce St., Milwaukee 4, Wis.

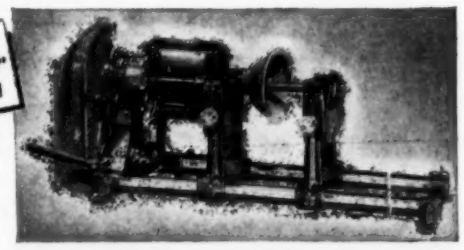
▲ Mention Item NED-759 when writing ▲

WHY SHIP "WOBBLIES" WITH YOUR PRODUCT?
. . . Bear-Balancing Defeats Them!

"Wobblies" of static and dy-namic unbalance are nobody's friends — yours or your customers. That is why improved standards, and sales opportunity as well, are bringing so many manufacturers to BEAR-BALANCING of rotating parts. Bear-Balancing is more economical. Any shop hand learns Bear-Balancing in less than a day.

Bodies are accurately balanced, statically and dynamically, to any recognized standard, and the operation fits readily into production sequence. All Bear balancers are widely adaptable within their range, all are very reasonably priced. Write for brand-new Bear literature . . . chase Wobblies, improve both product and sales! BEAR MFG. CO., Industrial Div., Dept. N-5, Rock Island, Ill.

WRITE for NEW "340" BULLETIN!



Bear Balancer Model 340 handles most balancing work in this industry.

1766

BEAR COMBINATION
STATIC AND DY-NAMIC BALANCING MACHINES

▲ Mention Item NED-760 when writing ▲

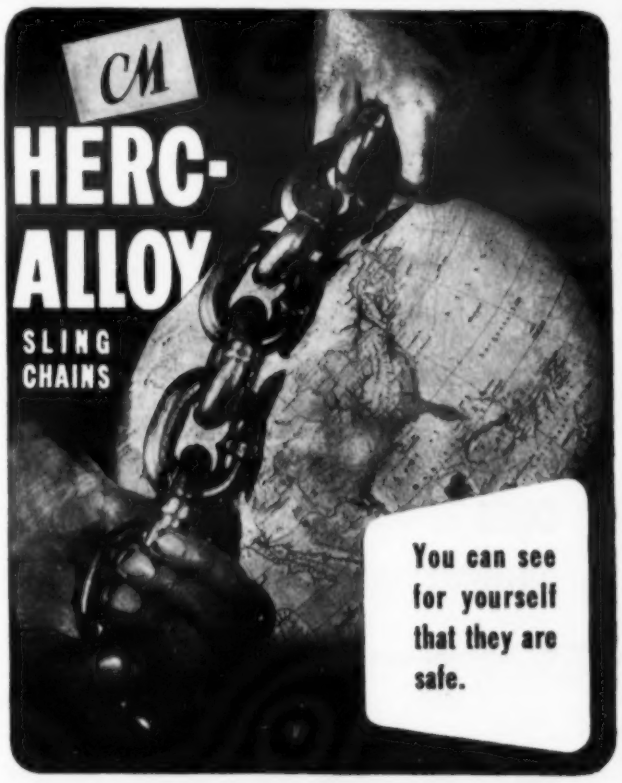
Photo Courtesy Ralph N. Brodie Co., Oakland, Calif., Makers of Petroleum Meters

Low Reject Heat Treatment For HIGH GRADE PARTS

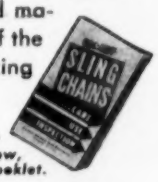
Gas cyaniding, Carburizing, Nitriding and Tempering for all metal parts are done with outstanding uniformity by the Homo Method. Specially good for big or dense loads. Let an L&N engineer give details.

LEEDS & NORTHRUP COMPANY, 1101 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad T-620(34a)

▲ Mention Item NED-761 when writing ▲



Just one of the big advantages of HERC-ALLOY Sling Chains is that you can determine their serviceability by a simple visual inspection.* Ordinary steel or iron chains, on the contrary, grow dangerously brittle with age . . . an insidious threat to the safety of men and materials. That's why more and more of the important companies are standardizing on HERC-ALLOY Sling Chains . . . because you can see for yourself that they're safe.



**Write for your copy of this new, informative booklet. No charge.*

HERC-ALLOY FEATURES

- America's *first* alloy steel sling chain . . . first to bear a serial number.
- Every CM HERC-ALLOY Sling Chain is alloy steel throughout . . . links, rings, hooks. There is only one grade . . . *the best.*
- Every chain is individually tested and accompanied by a certificate of registration.
- Links are side welded for maximum strength by patented INSWELL electric method.
- HERC-ALLOY Chains should *never* be annealed.
- HERC-ALLOY Chains are lighter . . . stronger . . . easier to handle . . . outlast ordinary chains 4 to 5 times . . . cost less on the job.

HERC-ALLOY . . . the chain you can *SEE* is safe

COLUMBUS-McKINNON CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland • San Francisco • Los Angeles

▲ Mention Item NED-762 when writing ▲

GET YOUR COPY OF THIS NEW EVER-LOK BULLETIN

GET THE FACTS ABOUT THE NEW *EVER-LOK* RECEPTACLES, PLUGS and CORD CONNECTORS 30 amperes, 440 volts, A.C.

Describes and illustrates the new EVER-LOK, 30 ampere, 440 volts, A.C. capacity unit for heavy duty industrial use . . . and scores of other applications in factories, office buildings, department stores, hospitals, hotels, institutional buildings, and many other heavy duty and high cycle jobs.

This Bulletin explains how EVER-LOK saves time and trouble, illustrates the many features built into the new EVER-LOK, lists ordering information, prices, and other important data. Write for your copy. Address Dep't EL-446-2

RUSSELL & STOLL COMPANY
EXPLOSION-PROOF, WATER-TIGHT, INDUSTRIAL LIGHTING FIXTURES AND EQUIPMENT. AUTOMATIC LOCKING "EVER LOK" CONNECTORS
125 BARCLAY STREET • NEW YORK 7, N. Y.

▲ Mention Item NED-765 when writing ▲

SEALED MERCURY RELAY

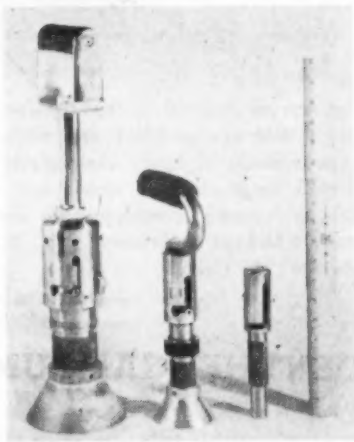
Rated at up to 35 amperes on 110-volt alternating current, this Hermaseal plunger type mercury relay is available in normally open or normally closed models for safe positive operation. Contact units are hermetically sealed. Relays operate on principle of displacement. Normally open model MR-8 relay has floating plunger which is pulled downwards, when coil is energized, to displace mercury. Mercury floods electrode inside cup and closes circuit. In normally closed model MR-16 relay, weighted plunger is pulled out of mercury when coil is energized and contact opens.

Illustrated model MR-8, with terminal block, is 4 inches high and 2-5/8 inches wide and projection is 2-1/8 inches. Mounting bracket is slotted for two size No. 8 or No. 10 mounting screws. Maximum centering spacing is 2-1/4 inches.

In operation there are no exposed parts and contact pitting is eliminated. Contact resistance never increases. Liquid mercury-to-mercury contact is unaffected by dust, dirt and moisture. Normally open model No. MR-10 is equipped with lock-in contact. Made by **Hermaseal Co.**, Elkhart, Ind.

▲ Mention Item NED-767 when writing ▲

STUD DRIVING TOOL



Employing exploding cartridge as source of power, this Tempotool stud driving hand tool will drive pin or stud into steel with sufficient force to set them firmly. Models 22, 38, and 45 are capable of driving studs or pins through ⅛-inch steel or concrete, ⅝-mild steel and 1¼-inch thick mild steel respectively. In operation, imparted force is similar to that of firearm. Explosion drives pin or stud through short barrel and into steel.

In addition to drive pins, which are used mainly for fastening purposes, both male and female threaded studs are available, latter to accommodate bolts or threaded rods. In this way, large objects can be fastened directly to seated stud.

Stud driving tool was originally developed for wartime use and it is claimed to have wide peacetime applications. Tool is particularly useful in securing bus duct supports to concrete and steel, attaching angle iron machine frames to concrete floors and securing conduit straps to cement or steel framing. No wiring or air lines are necessary for operation so that tool can be used in any location. No drilling is required. Cartridges of three different power charges are available for the Nos. 38 and 45 units. Made by **Tempo Products Co.**, 740 Superior Ave., N.W., Cleveland 13, O.

▲ Mention Item NED-768 when writing ▲

Threaded parts are better assembled with

STURTEVANT TORQUE WRENCHES

—thereby insuring correct and uniform tightening without distortion or breakage.

From ordinary bolts, nuts and screws to plastic bottle caps and unusual applications requiring accurate measurement of applied torque—supremacy of Sturtevant Torque Wrenches for maximum product control is universally recognized.

HEAR—FEEL—SEE pre-set torque automatically with STURTEVANT-SENSORY TORQUE WRENCHES.

Write for Bulletin No. 22

▲ Mention Item NED-770 when writing ▲

HERE is where you can cut cleaning costs

A long-lived nozzle makes all the difference in the world between high and low cleaning costs. Quick enlargement of the nozzle bore wastes costly air, spreads the abrasive stream into an ineffective pattern, reduces its velocity and hitting power, lengthens labor time, decreases cleaning effectiveness.

If the nozzles you are using require frequent replacement, let us show you how an American Nozzle will solve your problem once and for all, and save you money over the cheapest nozzle you can buy.

Write for your copy of the new free catalog on American Airblast Nozzles. Contains complete and comprehensive information, specifications and prices.

American WHEELABRATOR & EQUIPMENT CORP. (Formerly American Foundry Equipment Co.) 508 S. Byrkit St. Mishawaka, Indiana
NORBIDE • MEHRIUM • V-METAL NOZZLES

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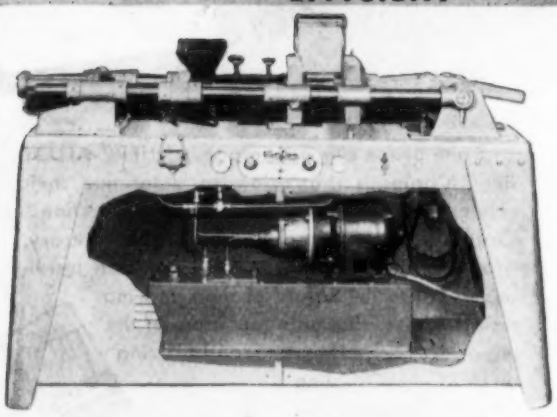
VAN DORN PLASTICS INJECTION PRESS

LOW COST PRODUCTION

SIMPLIFIED
PROFITABLE
DEPENDABLE
SERVICEABLE
VERSATILE
EFFICIENT



This Van Dorn 1 oz. molder, powered by a 2 hp motor, is hydraulically operated for economical production. • Automatic temperature control, automatic parts ejection, simple operation and low cost are a few of the advantages of the H-200 Press.

WE MAKE MOLDS for Van Dorn Presses . . . Proved . . . Tested . . . Ready to Run

Write FOR FREE FOLDER which illustrates and describes the Van Dorn Plastics Injection Press and its applications.

THE VAN DORN IRON WORKS CO.
2695 EAST 79th STREET • CLEVELAND 4, OHIO

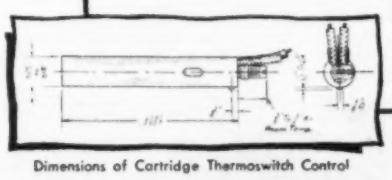
▲ Mention Item NED-766 when writing ▲

COMPACT DESIGN

In many temperature control applications, space is so limited that the physical size of the thermostat is important. The simplicity of the basic Fenwal design makes possible the combining of all the essentials of a good Thermotechnic instrument—high sensitivity, ruggedness and accuracy—in a unit of reasonable size and convenient dimensions—the Fenwal THERMOSWITCH Control.

In normal applications, Fenwal's compact units usually may be located in the product or process at the point where most effective control of the entire thermal system is achieved.

The drawing shows the dimensions of the Cartridge THERMOSWITCH Control—the basic THERMOSWITCH unit. Because of their compactness, Fenwal THERMOSWITCH Controls provide effective temperature regulation without interfering with the overall design of the product or process.



Dimensions of Cartridge Thermoswitch Control

CARTRIDGE THERMOSWITCH CONTROL

Fourteen Facts in Fenwal's Favor.

Send for your copy today.

Fenwal FENWAL INCORPORATED
31 PLEASANT STREET
ASHLAND MASSACHUSETTS

THERMOTECHNICS FOR COMPLETE TEMPERATURE REGULATION

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Air Power MAKES POWER PRESSES OUT OF KICK PRESSES

NP Kick Press Kit

★ Increased production with decreased operator fatigue ★ Every stroke uniform ★ Safe for use by inexperienced operators ★ Easily installed by average mechanic . . . *Write for bulletin DC-26*

CHOICE OF CONTROLS
N. P. push button valves or the N. P. foot valve can be supplied.

NATIONAL PNEUMATIC COMPANY
INDUSTRIAL SALES DIV., RAHWAY, N. J.

Pneumatic Specialists Since 1904

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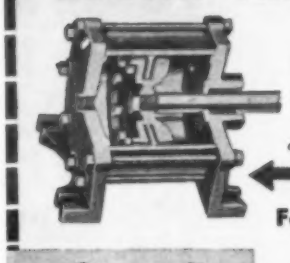
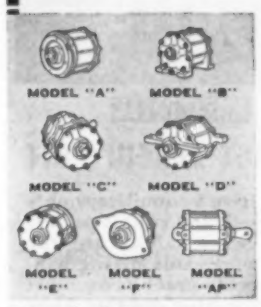
LOGAN AIR CYLINDERS



provide
Fast-Acting, Positive
Controlled Power
...AT LOW COST

For • PUSHING • PULLING • LIFTING • HOLDING and other applications



Standard LOGAN Air Cylinders help increase production in industrial applications of all kinds . . . important savings in operation time and idle machine time can be obtained. The constant power with follow-up assures positive, uniform actuation. Quicker response and maximum power without leakage result from the efficient Logan design. Available with cushioning at one or both ends.

7 Standard Mounting Types

Sizes from 1½" to 24" bore; any stroke to 18 feet. Pressures to 150 p.s.i.

ENGINEERING ADVICE—Write for recommendations on the correct cylinders for your jobs and most effective methods of installation. No obligation.

Logan SAVES ★TIME ★EFFORT ★MOTION

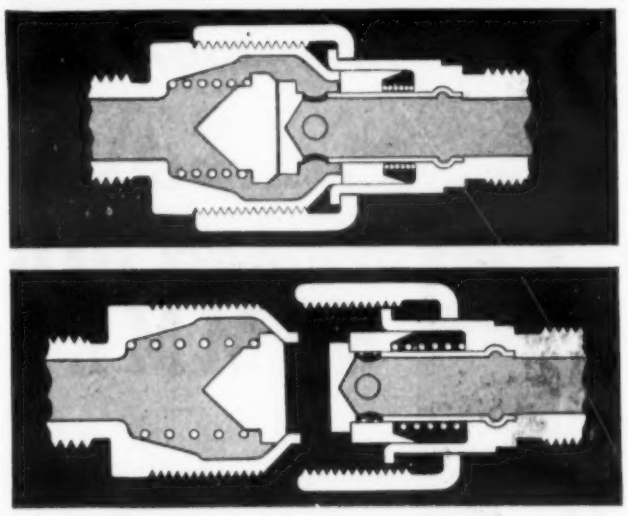
Air and Hydraulic Equipment

LOGANSPORT MACHINE CO., INC. 908 Center Ave, Logansport, Indiana

CHUCKS • CYLINDERS • VALVES • PRESSES • SURE-FLOW COOLANT PUMPS

FREE catalogs—Write for literature covering items in the Logan line in which you are interested.

▲ Mention Item NED-773 when writing ▲



AEROQUIP Self-Sealing Couplings*

eliminates the use of 2 Valves

With the Aeroquip Self-Sealing Couplings, fluid carrying lines may be instantly disconnected without leakage. Upon separation each half of the coupling automatically closes the line or tube to which it is connected and positively retains the fluid carried therein. No leakage or loss of fluid occurs and no air is allowed to enter the system on reconnection. Suitable for hydraulic and refrigeration systems as well as any lines carrying oils, fuels, coolants, or refrigeration gases.

AEROQUIP FIRSTS
Detachable Hose Fittings
Hydrofuse
X-Washers
* Another Aeroquip First

AEROQUIP CORPORATION
JACKSON, MICHIGAN

937 M & M BUILDING, HOUSTON 2 • • • 1709 W. 8TH ST. LOS ANGELES 14 • • • 868 FENCE BUILDING, MINNEAPOLIS 3

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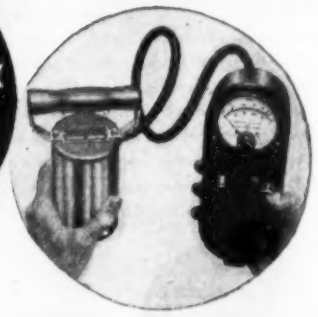
HERE'S better, faster MOISTURE TESTING for INDUSTRY

PORTABLE
EASY TO USE
NO POINTS TO BREAK OR MAR.
ACCURATE DOWN TO 0%



3 VERSATILE MODELS...

L-2, Flat Surface Type: for smooth surfaced materials.
K-2, Irregular Surface Type: specially designed for rough or smooth materials of any contour.
V-2, Thin Material Type: for thin, smooth surfaced, flat materials.

Scientific calibration, based on standard method for your trade, supplied with each instrument.

MANY APPLICATIONS—Moisture Register is based on principle of high frequency, power absorption. All models have wide field of adaptability, throughout all industries—as to materials, methods of use and range of moisture content. Special calibration for specific needs supplied at nominal cost.

WRITE TODAY for complete information, specifying type of material and range of moisture content to be tested. Moisture Register Company, Dept. H, 133 North Garfield, Alhambra, Calif.

ELECTRONIC MOISTURE REGISTER FOR INDUSTRY

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PULL TYPE SOLENOID

Of bipolar type, catalog 104S6 alternating current solenoid is of fully laminated construction and has unusual force stroke characteristics. Pull characteristic is ascending with decrease in stroke, with sealed stroke extremely high because of contact with two pole faces. It is especially suitable for use on spring loaded machine tool applications. Model shown has side plates which make it semi-iron clad type with only opening being at bottom for connecting of levers. Made by **Automatic Switch Co.**, 47-A E. Eleventh St., New York, N. Y.

▲ Mention Item NED-776 when writing ▲

DRILL CHUCK SELECTOR

Aid for engineers, draftsmen, toolroom supervisors and machine operators in selecting proper drill chuck for any straight shank drill is provided by this slide rule type selector. With one setting, it determines instantly the catalog number of style B drill chuck to be ordered. In addition, calculator shows recommended speeds and feeds for drilling various types of materials. Operation of calculator is similar to that of conventional type slide rule. Selectors offered free of charge by **Scully-Jones & Co.**, 1952 S. Rockwell St., Chicago, Ill.

▲ Mention Item NED-777 when writing ▲

AUTOMATIC CENTER

Eliminating need for using lathe dog, this Cent-a-matic model No. 10 automatic center makes it possible to duplicate lathe turned parts having variation of as much as 3/32-inch in depth of centering drill. In operation, center automatically adjusts itself to center hole depth. Duplicate mold parts having shoulders can be machined accurately.

Model No. 20 automatic center is designed for grinding diameters to shoulders and center drill depths can vary as much as 3/32-inch. With this unit, duplicate parts for plastic molds having shoulders can be turned to exact length dimensions. Center tips can be replaced, when worn or damaged, at low cost. Distributed by **Acme-Danneman Co.** 203-205 Lafayette St., New York 12, N. Y.

▲ Mention Item NED-778 when writing ▲

We're Shouting About Another Palmer First!

A NEW
Sensational EXTRUDED BRASS CASE Thermometer
Patented • Dust-Proof • Fume-Resistant

Palmer — originators of famous "Red-Reading-Mercury"—is first again with a sensational new Thermometer featuring an Extruded Brass Case. The case is fume-resistant, dust-proof, has pleasing contours and a durable nickel finish. This new Thermometer has a V-shape design and the "Red-Reading-Mercury" feature with a much longer scale . . . for easy, more accurate reading.
Equally important features are double strength, non-rattling glass shield; "snap-on" cap for easy removal of shield. Send for detailed Bulletins No. 46-2 and No. 46-3.
In 4, 6, 7, 9 and 12 in. models.

PALMER THERMOMETERS, INC.
Mfrs. Industrial, Laboratory, Recording and Dial Thermometers
2523 Norwood Avenue Cincinnati 12, Ohio
Canadian Plant: King and Geotge Sts., Toronto 2

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Remove SCALE, PAINT, RUST Quickly . . . Easily

USE AURAND CLEANING TOOLS

For any hard metal or stone surface—iron—steel—brick—concrete—etc.

Electric or Pneumatic 2 sizes of each

It's easy to remove paint, scale, rust and other accumulations with AURAND Cleaning Tools. Powered, rotary, chipping does a thorough cleaning job in less time. No special skill required. Even depth surface is assured by an adjustable shoe control. Cutter heads are renewable.

For further information, address Dept. 14

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

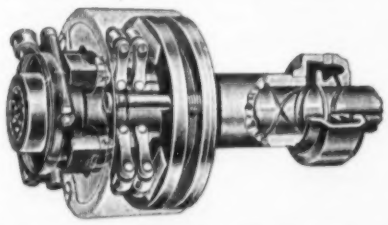
▲ Mention Item NED-780 when writing ▲

HOW ROLLING CONTACT SAVES MONEY

Rolling Contact eliminates friction and enables the Lad on Roller Skates to glide with little effort over Cement Walks where Ice Skates which employ Sliding Contact, would be useless because of friction. The Roller Toggles shown in the cut below, employ Rolling Contact, enabling MULE-PULL CLUTCHES to develop with little effort on the part of the operator, the POWERFUL, PERSISTENT PULL for which they are noted. These one-arm Toggles require no lubrication, have long life and seldom need replacement, even under constant in-and-out engagement. Another money-saving feature of value to you is the RING-OILING SYSTEM used on the Loose Pulleys of these clutches. This is proportional to the speed: needs filling but once in 30 to 90 days and protects you against ground-out Pulleys, scored Shafting and expensive shut downs. Over 25,000 MULE-PULL CLUTCHES are in daily use.

MULE-PULL CLUTCHES

SEND FOR BULLETIN No. 25-D



BROWN ENGINEERING CO.
129 NORTH 3RD ST. READING, PENNA.

▲ Mention Item NED-781 when writing ▲

at your finger-tips!

JOMAC Industrial Work-Gloves are as flexible as the hand itself. What's more, you've got safety . . . no matter how tough the maintenance or installation job! • JOMAC'S extraordinary fabric is "loop-finished," with hundreds of "air-cell" cushions *lock-stitched* into place. JOMAC Industrial Work-Gloves are *made for longer wear*. They give up to *7 times* the wear of ordinary work-gloves! When you look for flexibility, safety and long life in a work-glove, look to JOMAC. Address inquiries to C. Walker Jones Co., Philadelphia 38, Pa. Plants in Philadelphia, Pa.; Warsaw, Ind.; Detroit, Mich. *Foreign Representatives:* Gillespie & Company of New York, Inc., 96 Wall St., New York 5, N. Y.

"SHAKE HANDS WITH SAFETY"
JOMAC INDUSTRIAL GLOVES
THREE TYPES OF JOMAC GLOVES
REGULAR INDUSTRIAL TYPE • HEAT- AND FLAME-RESISTING
SAFETY GAUNTLET-CUFFS

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Peelable PRODUCTION STICKERS

APPLIED WITHOUT MOISTENING

ADHERE TO ANY SMOOTH SURFACE

EASILY PEELED OFF

Here's an entirely new type sticker that makes obsolete past methods of marking parts in production—takes the place of string tags, chalk marks, water-gum stickers.

These new Kum-Kleen stickers are far easier and faster to use—are applied without moistening, stick permanently with a finger-tip pressure to any smooth surface—metal, glass, plastic, wood, paper—won't fall off and can't get lost. When the job is done they peel off like magic—in one piece, never harm the surface. Available in various sizes, printed or plain.

Write for samples and booklet which explains hundreds of ways in which Kum-Kleen stickers have increased production and efficiency. Dept. NED-2.

Kum-Kleen

AVERY ADHESIVE LABEL CORPORATION, 58 W. Union St., Pasadena 1; 41 Park Row, New York 7; 968 S. Dearborn St., Chicago 5, and principal cities in Canada, Enterprise Sales, Toronto.

▲ Mention Item NED-783 when writing ▲

RESILIENT
FLEXIBLE
RESISTS IMPACT
INSULATES
DEADENS SOUND
RESISTS MOISTURE
MOLDPROOF
FLAME RESISTANT
NON-ABRASIVE
EASILY FABRICATED
NON-IRRITATING

...NO WONDER

Tufflex is a Wonder Material!

Almost daily, new uses are being found for Tufflex—the amazing felted wood fibre material! For Tufflex combines qualities found in few other materials—qualities that make it a No. 1 choice for widely different uses. For example, Tufflex is excellent for protective padding of delicate instruments or fine furniture—for cushioning play pens and ironing boards—for insulating or deadening sound—for padding of specialty furniture—and a host of other uses. For full information about Tufflex and its remarkable qualities, write Wood Conversion Company, Dept. 127-2 First National Bank Building, St. Paul 1, Minnesota.

tufflex MADE BY THE MAKERS OF *Balsam-Wool*

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THOUSANDS OF MANUFACTURERS NOW GET *Higher Production at Lower Cost* WITH SIL-FOS AND EASY-FLO

By preplacing these low-temperature silver brazing alloys and using fast handling and heating methods, metal joining with SIL-FOS and EASY-FLO has become a fast, low-cost mass production operation on hundreds of jobs. Also, the ability of these alloys to join stampings and tubular parts with one-piece strength has revolutionized the design of many products with big savings in production costs.

INVESTIGATE the increased production and cost saving SIL-FOS and EASY-FLO brazing can give you. For quick action—ask for a free demonstration and recommendations in applying these alloys. Ask especially for details about the new, faster acting, lower cost EASY-FLO 45. BULLETINS giving all the facts will be mailed on request. Write for them today.

HANDY & HARMAN 82 FULTON ST., NEW YORK

Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

▲ Mention Item NED-785 when writing ▲

MATERIALS HANDLING TRUCK

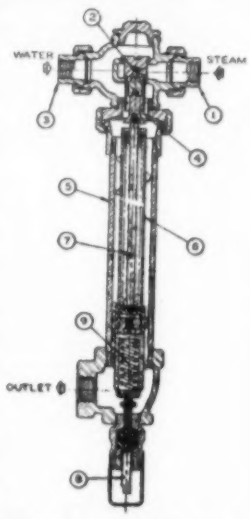
For handling unit loads mounted on disposable carrier sheets, this Pul-Pac materials handling attachment for Clark forklift trucks has gripping device that moves forward, clamps extended margin of carrier sheet and pulls sheet and load onto truck. At destination, load will be lifted and registered directly over area where it is to be deposited and pusher device will shove carrier sheet and load into position.

Attachment consists of hydraulically operated push-pull device and flat steel plate serving in place of conventional forks. Disposable sheets can be made of corrugated paper board, fiber board or other material. Advantages claimed for system include reduced pallet costs, increased storage area, reduced freight cost and elimination of pallet maintenance. Carrier sheet will serve as car liner during shipment. Truck attachment made by Clark Tructractor Div., Clark Equipment Co., 1952 Arze St., Battle Creek, Mich.

▲ Mention Item NED-786 when writing ▲

STEAM & WATER MIXER

Ample quantities of hot water for industrial plant showers and washrooms, as well as for hot water process requirements, are provided by this improved model steam and water mixer. Compact in size, unit can be used on steam pressures of up to 125 pounds per square inch, but steam pressure must be 20 per cent higher than water pressure. Overall size is 26 inches long and 5 inches in maximum width.



Steam enters at 1 and goes through valve 2 as indicated in illustration. Cold water enters at 3 and mixes with steam in injection chamber 4. Resulting mixture of hot water enters housing 5 and then flows over hermatically sealed thermostat. Hot water flow causes liquid filled thermostat to expand to push forward plunger 7 to close valve 2 and cut off steam at temperature set at 8 by key. Body 5 cools by radiation and liquid in thermostat 6 contracts so that plunger head 7 opens valve 2. In operation, balance is secured which holds valve open sufficiently to maintain desired temperature. Relief spring 9 prevents damage from accidental overheating.

Construction is brass with renewable valve heads and seats of stainless steel. Union connections are provided on steam and water inlets. Built-in liquid filled thermostat assures automatic control of water temperature which can be set at any required amount. Typical of capacity is delivery of 200 gallons per hour of water with temperature rise from 50 to 120 F, using steam at 75 pounds per square inch. Made by Sarco Co., 475 Fifth Ave., New York 17, N. Y.

▲ Mention Item NED-787 when writing ▲

Have you tried ALUNDUM ABRASIVE *for TUMBLING?*

THE outstanding economy of ALUNDUM Tumbling Abrasive in plant after plant is due to three important features:

1. Because it is all abrasive it has a continuous cutting action without glazing.
2. Its heavy weight gives it a fast, positive cutting action.
3. Its hardness and toughness insure a long, productive life.

ALUNDUM Tumbling Abrasive is available in seven sizes—four both tumbled and untumbled and three untumbled only.

Write for "Grits and Grinds"—Volume 7, Number 6 for further information.

NORTON COMPANY
Worcester 6, Mass.

G-174

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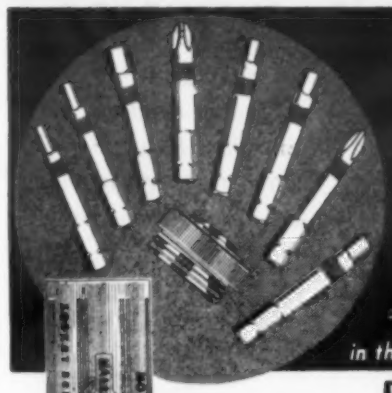
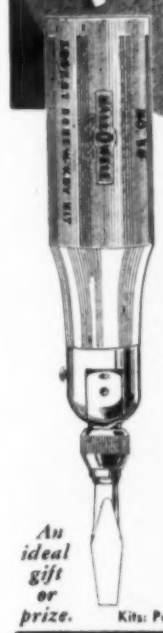


HEX
PHILLIPS
FLAT
SCREW
DRIVER
BITS
in this compact handle



HALLOWELL

"SOCKET SCREW" KIT

For men who like to have a complete supply of tools, yet dislike bulk and confusion, the Hallowell "Socket Screw" Kits are the answer. Their hollow, durable plastic handles hold interchangeable *steel* bits for most all purposes . . . Phillips, Hex and Flat. They each have a swivel bit-chuck, which locks securely in five positions. In large and small sizes.

Obtainable at Dealers throughout the country. If none near you, or he is sold out, send his name to us, along with yours, and you will be taken care of promptly.

An ideal gift or prize.

OVER 43 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.
JENKINTOWN, PA., BOX 581

Boston Chicago Detroit Indianapolis
St. Louis San Francisco

Kits: Patents Pending

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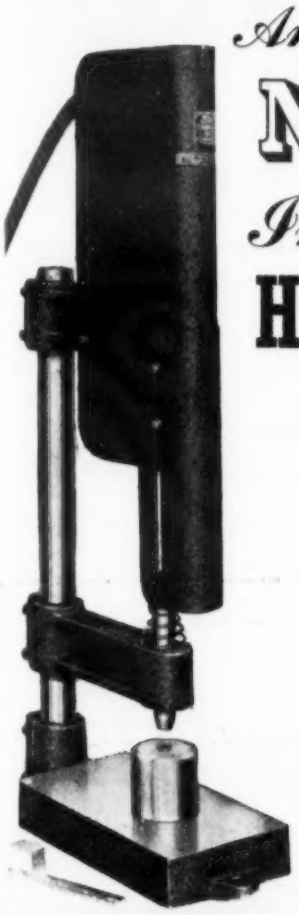
Announcing the

MEAD *Impact* AIR HAMMER



the efficient modern method for

PUNCHING .... RIVETING
ASSEMBLING . EMBOSSING
FORGING ..... FORMING
PEENING ..... MARKING
CRIMPING ..... CUTTING
BLANKING ..... COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27 pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides innumerable punching operations, with suitable attachments it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES *save precious man-hours!*

CATALOG READY
Send for copy of our new Air Power Catalog illustrating, describing many new man-and-money-saving devices.

MEAD SPECIALTIES COMPANY
4114 NORTH KNOX AVENUE
DEPT. NA-27 • CHICAGO 41, ILL.

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ONE MINUTE AFTER IT'S APPLIED

WITH 50,000 LB. LOADS!

Use it for a complete floor resurfacing job or a single patch. Your trucks roll while it is being installed. Sets instantly—no interference—no delay. Comes pre-mixed, ready to use. Merely prime, temp or roll, and let the traffic move.

That's all there is to it.

SWIFT FLOOR supports loads of 25 tons. Lasts for years. Skidproof, fireproof, resilient, self-healing. Any average workman can apply it.

Write for full information—or better yet order a drum. It's unconditionally guaranteed. You take no risk!

A wire brush and tamper included with your first order.

THE MONROE COMPANY, INC.
18705 Quebec Ave. Cleveland 6, Ohio

SWIFT-FLOOR USERS COMPRISE THE BLUE BOOK OF AMERICAN INDUSTRY. JOIN THEM!

▲ Mention Item NED-791 when writing ▲

For advertising and book rates, call your agency or write . . .

MacRae's Blue Book
A DIRECTORY OF AMERICAN INDUSTRY

28 E. HURON ST. CHICAGO 11, ILL.

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RECOVER *More* GOLD . . . *More* EASILY

with the TITAN Rotary Amalgamator

Recovering up to 98% of the free gold content quickly and easily, the Titan Rotary Amalgamator is simple and economical to operate. Rotary action of the plates achieves high efficiency. The Titan makes amalgamation tables and barrels obsolete. Write for full information today.

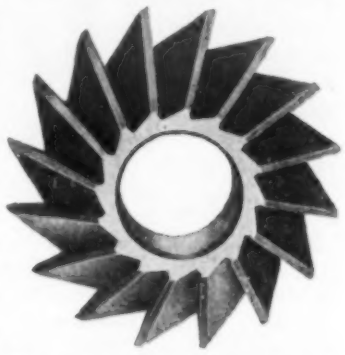
Manufactured Exclusively by

MILL & MINE SUPPLY, INC.
2700 FOURTH AVE. S. SEATTLE 4, WASH.

▲ Mention Item NED-793 when writing ▲

CAST CARBIDE

Available in full range of tool bit sizes, in circular form tool blanks and in shapes for making dies, bushings, bearings and gages, Cadmet cast carbide is said to have exceptional hardness and wear resistant properties. Material is tough and can be cast into full length bits or intricate shapes without danger of breakage. It cannot, however, be heat treated.



Recommended uses for cast carbide include parts requiring maximum wear resistance at high temperatures and special shaped tools. With improved precision casting techniques, little or no grinding is necessary. Internal and external threads, shoulders and cored holes can be produced. Sizes up to 3 inches in diameter and up to 3 pounds in weight can be cast. Made by **Casting Development & Mfg. Co.**, 4506 Wayne Ave., Philadelphia 44, Pa.

▲ Mention Item NED-794 when writing ▲

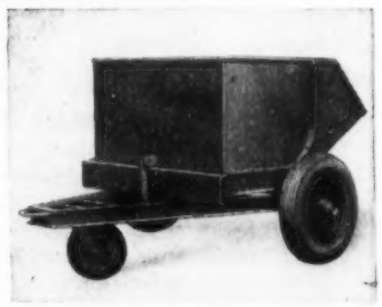
PROGRAM CLOCK SYSTEM

Offered as complete installation for industrial plants, institutions and public buildings, program clock systems employ Telechron self-starting synchronous motors. Because of synchronous power operation, servicing is held to minimum. Clocks are available in various sizes, with single or double dial mountings for installation at as many key points throughout building as required. Signals are sounded automatically and no supervision is needed. Timing of program can be changed easily. Made by **Auth Electric Co.**, 34-20 45th St., Long Island City 1, N. Y.

▲ Mention Item NED-795 when writing ▲

TRAILER DUMP TRUCK

Pneumatic tires, center caster for increased maneuverability and quick return to normal position are featured improvements of this Phil-Dump industrial trailer dump truck (*Item NED-439 Jan. '41*). Unit is of welded steel construction throughout and is equipped with Timken bearings. Capacity is 1 cubic yard. Construction features include roll-over type body and chain release. Units are recommended for rapid handling and dumping of scrap, castings and sand in steel mills, foundries and other types of industrial plants. Made by **Phillips Mine & Mill Supply Co.**, 4219 Jane St., Pittsburgh 3, Pa.



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DRIVE SCREWS WITH AMAZING *Speed*

One second each! Think of it! Merely place the assembly on the table; move from screw hole to screw hole. This husky, hopper-fed machine does the rest. Hands do not touch screws.

CUTS COST
INCREASES
PRODUCTION

3 Models (one to fit your requirements) driving screws from No. 2 to 5/8. No marring of heads.

Send Sample Assemblies for Estimates

DETROIT POWER SCREWDRIVER CO.
2819 WEST FORT ST. • DETROIT 16, MICHIGAN

▲ Mention Item NED-797 when writing ▲

Did YOU ever consider WEDGE Split CHILL RINGS for Welding Pipe or Parts?

. . They have solved many problems!

WEDGE Chill Rings with the patented SPLIT Feature are widely known for their use in welding pipe . . . but they have other uses just as important. For example: difficult welds can frequently be simplified with the use of WEDGE Split Chill Rings, and the welds are better and stronger. New uses are constantly being found, replacing older welding practices with this faster, more economical method. If you have a special welding problem, involving pipe, tubing or parts, WEDGE Split Chill Rings may be the answer. Why not find out?

Write for further information

WEDGE PROTECTORS, INC.
3973 Jennings Road Cleveland 9, Ohio

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-798 when writing ▲

▲ Mention Item NED-799 when writing ▲

IT'S EASY!

...as making mud pies

Yes . . . it's just that easy, to resurface holes or rough spots in concrete floors with ADAMITE CEMENT.

Here's why:

Nothing to add but water—bonds perfectly to the old floor—guaranteed not to shrink—compression strength three times that of concrete — absolutely impervious to oil — produces a PERMANENT patch in as little as 6 hours.

Used by Army, Air Corps, General Motors, International Harvester.

If you have never used Adamite, you are due for a new and sensational experience.

Write today for our Bulletin 120.

DO IT RIGHT WITH HALLEMITE

THE HALLEMITE MANUFACTURING CO.
CLEVELAND 13, OHIO

▲ Mention Item NED-803 when writing ▲

Cut Materials-Handling Costs . . .

One man can unload a truck quicker, and with less fatigue, when he uses a lightweight portable gravity conveyor.

● THE LAMSON LIGHTWEIGHT PORTABLE GRAVITY CONVEYOR can be set up quickly to expedite the unloading or loading of freight, and deliver freight to or from any section of warehouse or dock storage.

Packaged merchandise is carried from basement storage and delivered to shipping department as required, over Lamson Roller Gravity and Belt Conveyors.

● LAMSON ROLLER CONVEYORS are saving time and cutting costs in many plants throughout the country. Adaptable to handling all types and kinds of containers.

Tiering with a Lamson Utility Conveyor. Adjustable to various angles.

● LAMSON UTILITY CONVEYORS can be used anywhere for loading, unloading and tiering. Serves as an auxiliary to portable or built-in plant conveyor systems.

LAMSON CORPORATION
550 Lamson St., Syracuse 1, N. Y.

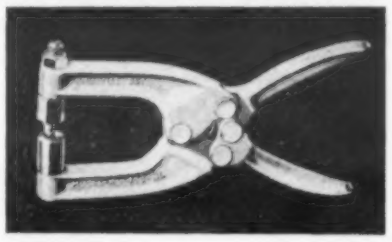
Gentlemen: Please mail folder or folders on:

☐ Lightweight Portable Gravity Conveyors
☐ Roller Gravity Conveyors ☐ Utility Conveyors

Name.....Title.....
Company.....
Street.....
City and Zone.....State.....

▲ Mention Item NED-804 when writing ▲

SHEET METAL ALIGNING TOOL



Several sheets of metal can be aligned quickly in position for riveting, spot welding or drilling with this model KL-450-HL hole locator. Device looks like ordinary pliers and operates as simply. Toggle action automatically locks upon work held so that operator's hands are free to perform other work. Pressure spindle can be adjusted to admit work up to 1¼ inches thick and locating pins are available in most widely used diameters. Unit is 8 inches long and 3 inches wide. It is capable of holding maximum of 500 pounds. Made by **Knu-Vise, Inc.**, 2212 Eighth St., Detroit 16, Mich.

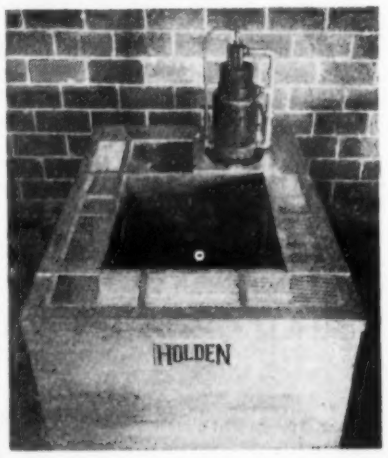
▲ Mention Item **NED-805** when writing ▲

GRAIN CEMENT & THINNER

Adaptable for use as adhesive for polishing wheels, grain cement and thinner is of improved type. Material is said to overcome deficiencies of organic glues. Grain cement and thinner has been used for a number of months with success. Special instructions relative to use are mix thoroughly before application; pound and work grain into wheel; be sure wheels are dry; and make several wheels with different mixtures to find correct one for job. Made by **Hanson-Van Winkle-Munning Co.**, W. Church St., Matawan, N. J.

▲ Mention Item **NED-806** when writing ▲

QUENCHING FURNACE

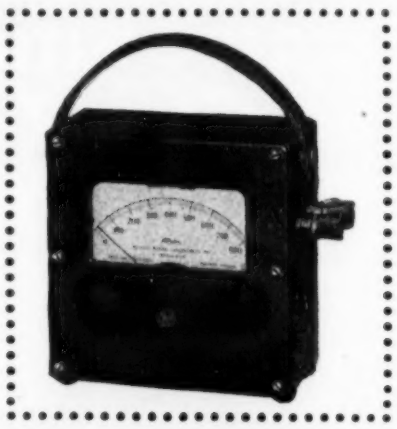


Heated by either gas or electricity, Marquenching furnace is production unit with normal operating range of 350 to 750 F for Martempering and from 500 to 750 F for Austempering. Parts are quenched in furnace and cooled to point where they are at bath temperature, then cooled to finished transformation of martensite.

Furnace embodies five features. Positive action pump circulates liquid completely every 3½ minutes. Liquid is pumped into troughs and back over spillway into pumping section, producing positive cooling area. Additional cooling is produced by blowing air at 16 ounces of pressure for any volume under spillway. Series of screens provides positive method of filtering out hardened salt and scale. Automatic control of temperature is provided in both quenching and cooling areas.

Three models are available, with pot dimensions of 24 x 26 x 40 inches, 36 x 26 x 40 inches and 36 x 36 x 40 inches. Productive capacity of model illustrated, which has pot dimensions of 36 x 26 x 40 inches, is 500 to 700 pounds of work per hour quenched with hardening temperature range to temperature of 400 F. Made by **A. F. Holden Co.**, 200 Winchester Ave., New Haven 8, Conn.

▲ Mention Item **NED-807** when writing ▲



TYPE 1500

Alnor PORTABLE PYROMETER

This compact, lightweight pyrometer is mounted in a magnetically shielded metal case, providing for accurate temperature readings in shop and general industrial use as well as in the laboratory.

The pyrometer movement is the Alnor double air gap type with Alnico magnet. The case is heavy gauge sheet steel, providing magnetic shielding so that Type 1500 may be used on a steel top table, near other magnetic instruments or in strong alternating fields without suffering the unpredictable errors experienced with unshielded pyrometers.

Type 1500 is available as a single circuit pyrometer with a choice of ten scale ranges, 0-400 to 0-3000 F, or as a double or triple range instrument built to order with scales as specified. Centigrade scales can be furnished. Write for descriptive bulletins.

ILLINOIS TESTING LABORATORIES, INC.
420 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

▲ Mention Item NED-808 when writing ▲

AVAILABLE NOW! by The Million!

GASKETS

Made of

ASBESTOS
PAPER
NEOPRENE
RUBBER
and many other materials

Prompt Deliveries, to hundreds of manufacturers who require gaskets in the production of their products, is more than a promise, at Fel-Pro. For, in our plants, we have the facilities to produce the **type** of gaskets you want, in the **quantities** you need, at **the time** you want them.

If your product requires some special, different kind of gasket, put the problem up to the specialized knowledge and experience of Fel-Pro's Engineering Department. Many of the largest manufacturers are Fel-Pro customers. FOR YOUR FREE FOLIO containing 53 actual samples of materials suitable for Gaskets, Packing, Insulating, Dampening and Sealing, write today to the

INDUSTRIAL GASKETS AND PACKING DIVISION OF FELT PRODUCTS MFG. CO., 1510 Carroll Ave., Chicago 7, Ill.

FEL-PRO
for ORIGINAL EQUIPMENT requirements

▲ Mention Item NED-809 when writing ▲

One thing is sure . . . you can safeguard such equipment as motors, transformers, solenoids and adjustable transformers against overheating and burning out by incorporating Klixon protectors in this type of equipment.

Built in as an inherent part of the apparatus, Klixon protectors match the thermal characteristics of the equipment, thus assuring full protection without limiting full rated output.

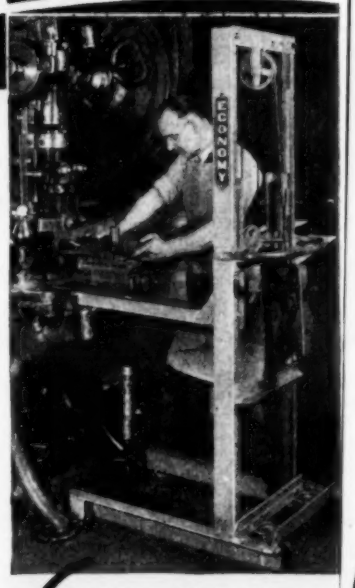
When temperature within the apparatus reaches the danger point, the Klixon protector opens the circuit preventing possible burnouts. As soon as the equipment cools to a safe operating level, the protector recloses the circuit either automatically or waits for manual reset depending on the type of protector used. Harmless momentary overloads do not cause nuisance tripouts. Specify and insist on Klixon.

SPENCER THERMOSTAT COMPANY
1902 FOREST STREET, ATTLEBORO, MASS.

▲ Mention Item NED-810 when writing ▲

Save production time with a

SHOPLIFTER



One man can handle heavy dies up to 500 lbs. alone.

•

Handy for general shop lifting jobs—loading trucks, etc.

•

Easily moved about on the 4" diameter wheels.

•

Platform, steel plate, 24"x24"
Overall height—6'0"
Platform lift—4'6"

•

Floor lock (optional) holds machine firmly to the floor.

•

Other Economy Lifting Machines of heavier capacities up to 5000 lbs. available.
Write for catalog.

•

PROMPT DELIVERY

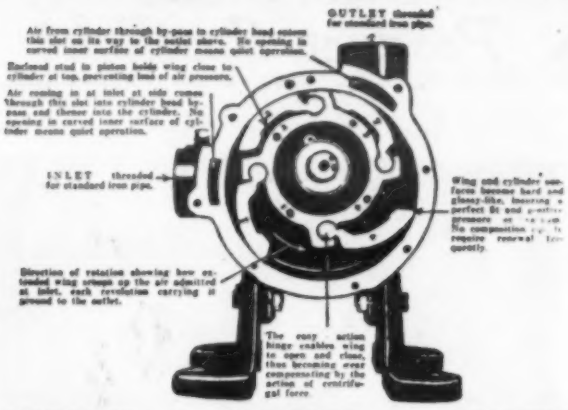
2681 W. Van Buren St.
Chicago 12, Ill.

Price $157.50
Floor lock $10.00 extra.
Full Freight Allowed

ECONOMY ENGINEERING CO.

▲ Mention Item NED-811 when writing ▲

LEIMAN BROS. ROTARY VACUUM PUMPS



NOISELESS • POWERFUL • EFFICIENT

TAKE UP THEIR OWN WEAR

STANDARD EQUIPMENT ON MOST PRINTING & BINDING MACHINES

A machine like Leiman Bros. Air Pump, which is used by the world's leading concerns in every line of work surely has some valid claim for your recognition in equipping your devices with air pumps. Your customers will have that much more confidence in your machines and it will cost you nothing extra for this great advantage.

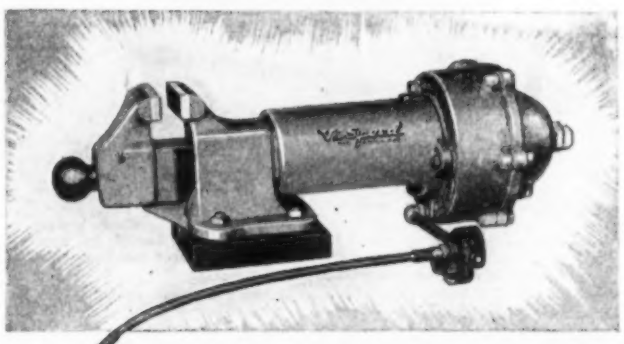
Get the Free Information

LEIMAN BROS. 167 Christie St. Newark 5, N. J.

▲ Mention Item NED-812 when writing ▲

AIR VISE

ZERO to 3½ TONS AT JAWS



FOOT-OPERATED FREES BOTH HANDS

Vi-Speed is more than a holding tool—it's a powerful foot-controlled air-powered unit that permits fast filing, crimping, bending, forming, chipping, riveting, etc. and thru adjustable air control is able to handle a wide range of light or heavy work. *Vi-Speed* is safe, for movable jaw cannot close beyond the selected position and objects held in jaws cannot work loose—only foot pedal action will release the piece. Maintenance is nil. *Immediate delivery.*

VAN PRODUCTS CO.
172 ERIE TRUST BLDG., ERIE, PA.

Write For New Catalog

A Few Sales Territories Available

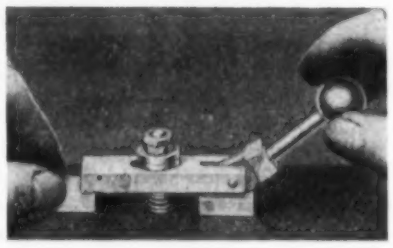
▲ Mention Item NED-813 when writing ▲

FIRE EXTINGUISHER SELECTOR

Serving as valuable aid in determining plant and office safety measures, this Randolph Data-Guide slide chart provides information about suitability, maintenance and performance of soda-acid, foam, pump tank, dry powder, loaded stream, carbon dioxide and carbon tetrachloride fire extinguishers. Reverse side of slide chart indicates maximum distances from operator extinguishers can be located and how high units should be bracketed. Data chart available free upon request. Offered by **Randolph Laboratories, Inc.,** 10½ E. Kinzie St., Chicago 11, Ill.

▲ Mention Item NED-814 when writing ▲

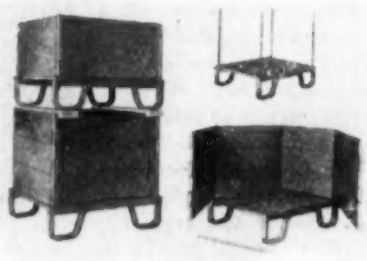
MIDGET FIXTURE CLAMPS



Series of small fixture clamps for easy holding of small work pieces is named Westpo Midget. Four styles of clamps, including quick action clamps, are offered. Clamp strap is only 2½ x ⅝ x ⅜-inch in size. Spherical washers with ground radii compensate for irregularities in work. Clamps are made of steel, heat treated and cadmium plated. Made by **West Point Mfg. Co.,** 19627 Merriman Ct., Farmington, Mich.

▲ Mention Item NED-815 when writing ▲

COLLAPSIBLE STEEL BOXES



Design characteristics of this collapsible steel box for skid platforms permit numerous combinations for wide range of industrial materials handling applications. Skid platforms are provided with sockets to receive 1-inch standard pipe which serves as corner post. Panels for sectional boxes are 12 inches high and have loops of steel that engage with pipe stakes in platform. Panels are then slipped over pipe stakes and can be built up to any height. Each panel reinforces adjacent panel so as to withstand high loading.

It is possible to equip skid platform with sides only, with ends only or any combination thereof. It is also possible to leave out any portion of a side to facilitate loading and unloading of materials. Illustration shows how skid platform can be used with corner stakes only and also how boxes, when loaded, can be tiered one on top of another with no difficulty.

Wooden or metal shelves can be inserted between panels to form portable shelves. There are no bolts or screws required in constructing sectional box, and when not in use boxes can be stacked to occupy minimum amount of space. Made by **Market Forge Co.,** 54 Garvey St., Everett 49, Mass.

▲ Mention Item NED-816 when writing ▲

All HEIN-WERNER HYDRAULIC JACKS

are factory-tested at 1½ times their rated capacity

Complete line includes models of 3, 5, 8, 12, 20, 30 and 50 tons capacity. For details, consult your nearest industrial supply distributor, or write us.

HEIN-WERNER MOTOR PARTS CORP.
WAUKESHA, WISCONSIN

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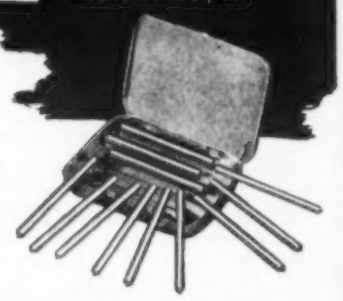
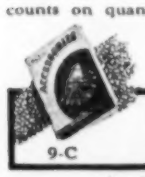
Essential IN ALL TOOL ROOMS

GORTON HARDENED CUTTER BLANKS



101 uses in tool, die, mold and engraving shops as well as for production work. Made of special heat treated alloy steel from 1/10" to ½" dia., 1½" and 4" long, easily ground to shape and size. Used when milling deep cavities, special grooves of varying sizes and for other fine, precision work. Save money with these blanks and eliminate expensive special type cutters. Discounts on quantity purchases.



FREE Complete information on the above and other time-saving Gorton accessories and small tools. Send for Bulletin 1317 today.

9-C

GEORGE GORTON MACHINE CO.
1902 RACINE ST., RACINE, WISCONSIN

▲ Mention Item NED-818 when writing ▲

New DURO-CHROME 80 tooth Action! RATCHET WRENCH

Gets Positive Turns in Arcs as Narrow as 5 Degrees.

Drives: ¼"; ⅜"; ½".

80 tooth action gets plus results! The small, sleek head not only reaches the hard-to-reach spots but gets positive action there—gets turns on 5-degree take-ups, where no action was possible before! A flip of your finger reverses this great new tool. And you'll learn to depend on it: it's DURO-CHROME construction throughout—alloy steel, with strength a full third above Gov't specifications. In every drive size the proportion and balance are exactly right, and that triple chrome "skin" is the kind you'll love to touch! . . . Duro Metal Products Co., 2649 No. Kildare Ave., Chicago 39, Illinois.

1967

DURO TOOLS (HAND TOOL DIVISION)
The Mechanic's Best Friend
OVER A BILLION BUILT SINCE 1916

ALSO MAKERS OF DURO MACHINE TOOLS

▲ Mention Item NED-819 when writing ▲

WEIGHT MUST BE MOVED AND ECONOMY DICTATES PORTELVATOR

You'll find a thousand jobs for Portelvator, the rugged portable elevating table with ease of operation and stability built-in. • Use as a level under overhanging work, to raise or lower heavy dies and castings to machine height, to fetch and carry, to load and unload, to charge and discharge heat treating furnaces, as a tough and willing helper to every man in your shop. • Made in three standard models with carrying capacities ranging from 1,000 to 5,000 pounds. Special models built to meet "out-size" specifications. • Equip your shop with Portelvator and watch your production mount. Write for literature and prices . . . Address Department H-P.

THE Hamilton TOOL COMPANY
SUPER SENSITIVE DRILLING MACHINES · TAPPING MACHINES · PORTELVATORS
NINTH STREET AT HANOVER · HAMILTON · OHIO · U·S·A

▲ Mention Item NED-820 when writing ▲

THE CN-2 ABRASIVE BELT GRINDER

Comprising Resilient Contact Wheel—Idler—Abrasive Belt—Platen—Driving Pulley and Arbor—Motor mounting (Electric motor not included)

KEEPS PRODUCTION HIGH ALL DAY

Your operators find belt grinding easier because the grits are exposed for work . . . They do not have to "lay on" as they do with an abrasive or loaded wheel . . . and production stays high because they do not suffer "3 o'clock fatigue."

The CN-2 eliminates wheel loading . . . wheel digging . . . wheel dressing. Grinds on contact wheel, platen, or free belt.

CN-2 increases output over ordinary bench grinder by 200%! Use the CN-2 for deburring, bevelling, chamfering, clean-up, knocking-off corners . . . In many other operations in assembling and machining departments, tool rooms, job shops, service stations.

Arbor for contact roll and V-pulley permits use of unit independent of a bench grinder. Easily adjusted for vertical or horizontal use within 90° arc. Weighs only 15 lbs. Write today for full information on CN-2 Abrasive Belt Grinder.

PORTER-CABLE MACHINE CO. 1710-2 N. SALINA ST. SYRACUSE, N. Y.

▲ Mention Item NED-821 when writing ▲

For Hydraulically Driven Machinery

VICKERS HYDRAULIC (OIL) PUMPS

Vickers Vane Type Pumps, having the exclusive pump design features which have revolutionized oil hydraulic power methods, are available in hundreds of sizes and types:

1 G.P.M. to 60 G.P.M. Pumps, to 1000 P.S.I. . . . Bulletin 40-25
Two-Stage Pumps to 2000 P.S.I.—2 G.P.M. to 57 G.P.M. . . . Bulletin 40-16
Two-Pressure Large-Small Volume Pumps . . . Bulletin 38-14

Applications include hydraulically operated machine tools, presses, plastic and die casting machines, special processing machines, road machinery, etc.

Write for information covering your requirements.

VICKERS Incorporated

Oakman Blvd. • DETROIT, MICHIGAN

▲ Mention Item NED-822 when writing ▲

SHELDON

New TRB—S56 Precision Lathe $1000.00

MORE ACCURACY, MOST LATHE PER $

No other moderate priced lathe and but a few of the most expensive, have the "Zero Precision" tapered roller spindle bearings, have beds and ways or lead screws held to such close tolerances. In standard quality tool features, no other lathe can offer as much capacity, utility, and convenience per dollar, as you get in the new Sheldon TRB-S56.

This 11¼" swing, 1" collet capacity, 56" bed precision lathe comes with full quick change gears, a full double walled apron with power longitudinal and cross feeds, 8 spindle speeds (35-1350 r.p.m.) and a fully enclosed double V-Belt underneath motor drive, mounted on a modern welded steel bench, complete, less motor for $1000.00 f.o.b. Chicago.

Write for "TRB" Circular.

SHELDON MACHINE CO. Inc.
4215 N. KNOX AVENUE • CHICAGO 41, ILLINOIS, U.S.A.

▲ Mention Item NED-823 when writing ▲

ELECTRIC STEAM BOILER

Steam pressures of up to 200 pounds per square inch and output of up to 2 boiler horsepower can be attained with this Speedylectric electrically operated steam boiler. Unit employs solid rods for electrodes and utilizes water between them as resistance element. This provides for production of sizable volume of steam, about 65 pounds per hour, at any desired pressure in small diameter vessels. Boiler will not be damaged by low water condition because absence of water between electrodes stops operation of boiler.

Boiler control mechanism can be set for any desired pressure by turning dial control. Pressure will be maintained steadily and automatically. When boiler is used for industrial applications such as with plastics molding press, press can be located where convenient and operated any time of day or night. Boiler is recommended also for use with tire recapping devices, steam and solvent cleaners, sterilizers, fur glazers, millinery steamers and laboratory installations. Made by Livingstone & Co., 89 Broad St., Boston, Mass.

▲ Mention Item NED-824 when writing ▲

ELECTRONIC WELDING TIMER

Providing interval timing for welding operations over range of from 3 to 120 cycles, type 30CR3 electronic welding timer is applicable to all manual, air or motor operated general purpose spot welding equipment. Accuracy throughout range is within 2 per cent. Timing adjustment is located on panel inside housing to provide tamperproof setting. Timer can be used on either 115 or 230-volt alternating current.

Proper selection of terminals on terminal panel will provide beat or nonbeat timing. Panel has dead front so that there is no danger of operator touching terminals when setting timing interval. Made by Photoswitch, Inc., 77-89 Broadway, Cambridge 42, Mass.

▲ Mention Item NED-825 when writing ▲

DO YOU KNOW?

Having exceptional mechanical and dielectric strength at temperatures up to 2000 F, new all-crystalline porcelains are particularly suitable as insulators for aviation spark plugs, radar transformers, and for other uses involving sustaining loads at elevated temperatures. Developed by Porcelain & Pottery Laboratory, National Bureau of Standards, Washington 25, D. C.

▲ Mention Item NED-826 when writing ▲

The HEAVIER the PULL the GREATER the GRIP

with this ingenious Wedge Lever Principle

MERRILL-VOLZ CLAMP

for raising, lowering and conveying any flat surface metal sheets, plates, drums, etc

Drop Forged throughout of Special Steel.

Powerful-Foolproof

Sizes ½, 1, 3 and 6 Tons. Larger sizes to order.

Write MB

MERRILL Brothers

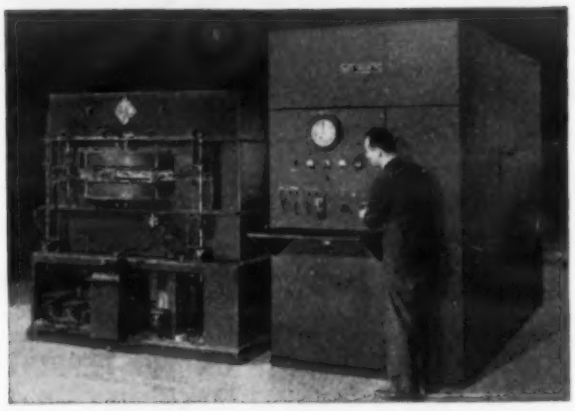
(Under same Family Management for over ¾ of a Century)

56-13 Arnold Avenue Maspeth, N. Y.

▲ Mention Item NED-827 when writing ▲

ALLIS-CHALMERS Product Spotlight

Published by Allis-Chalmers, Milwaukee 1, Wis. One of the Big 3 in Electric Power Equipment—Biggest of All in Range of Industrial Products



Announce New 20-Million-Volt Betatron

Milwaukee, Wis.—Allis-Chalmers is now offering industry a new seeing-eye—its 20-million-volt push-button controlled *betatron*. Powerful new X-ray provided by this betatron makes possible radiographic inspection of forgings, castings, welds and machine assemblies. Within minutes, flaws as small as 1/16-in. diameter can be detected in steel thicknesses of 20 in. and over, and as small as 1/32-in. diameter in thicknesses between three and 15 in. Bulletin 01B6684 has complete story. Write for it today.

A 2179

▲ Mention Item NED-828 when writing ▲

Have you a Corrosion Problem?

INVESTIGATE Beckman pH CONTROL

An efficient solution to many plant corrosion problems—often without the need for hard-to-get corrosion-resisting alloys!

Investigate TODAY what Beckman pH Control can do in solving YOUR corrosion problems. Because Beckman pH Control neutralizes corrosive solutions BEFORE they contact costly plant equipment, hard-to-get corrosion-resisting materials are often unnecessary. For example . . .

IN COOLING SYSTEMS water absorbs CO_2 in cooling towers, forming carbonic acid and becoming increasingly acidic as water is recirculated. This causes excessive corrosion of machines, condensers and other plant equipment.

SOLUTION: Many plants now guard against these risks by Beckman-controlling pH of cooling water, thus automatically maintaining it at optimum pH for minimum corrosion.

LET US HELP YOU get longer life, better efficiency from your plant operations through BECKMAN pH Control. Outline your problem to our engineering department for a recommendation.

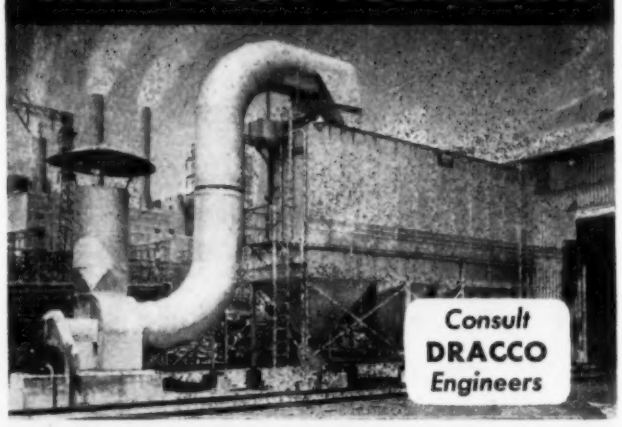
SEND FOR DESCRIPTIVE LITERATURE

NATIONAL TECHNICAL LABORATORIES, South Pasadena 6, Calif.

Beckman THE LEADING NAME IN pH

▲ Mention Item NED-829 when writing ▲

TAKE DUST OUT OF YOUR PLANT



Records in many plants prove the benefits derived from DRACCO Dust Control. Getting rid of DUST will ALWAYS save money because it prolongs life of machinery, reduces maintenance, improves working conditions and helps to increase production. Why not discuss your dust problems with DRACCO Engineers? They have had more than 30 years of experience in dust control.

For Further Information Write

DRACCO CORPORATION

4883 E. 220th Street, Cleveland 5, Ohio New York Office: 130 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

▲ Mention Item NED-830 when writing ▲

Coal Handling for Small Heating Plants

SIMPLIFIED, CLEAN ECONOMICAL

—with a Detroit Electric Hoist, Coal Bucket, and a short length of monorail.

Installations are paying for themselves in actual dollars saved.

Added advantages; Ease in Handling, Time Saved, Clean Surroundings.

Get the facts from Detroit Hoist Bulletin No. 805.

DETROIT HOIST & MACHINE CO.

8208 MORROW ST., DETROIT 11, MICH.

▲ Mention Item NED-831 when writing ▲

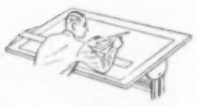
DIETZGEN *Ageproof* VELLUM

The perfect tracing medium . . . product of the plastic age

If you want a tracing vellum that combines a perfect drawing surface, clear transparency for reproduction and long-life durability, then you want Dietzgen *Ageproof* Vellum.

For this vellum is a scientifically created sheet, made from 100% all white rag stock, resin-bonded to provide a permanent structure, plasticized through and through for ageproof transparency, able to withstand repeated erasure and correction without impairment to its drawing surface, without ghosting, feathering or blots. Dietzgen Ageproof Vellum uses NO oil, wax or grease in its manufacture, cannot turn yellow with age, or become brittle, cannot lose its transparency, cannot bleed oil to other drawings, cannot pick up dust, cannot turn rancid. Users say Dietzgen Ageproof Vellum has no equal. Test it in any way. Dietzgen Ageproof Vellum is available in rolls and sheets of all needed sizes. Ask your regular Dietzgen dealer or the nearest Dietzgen office listed below.

Tough and stable



Quality unimpaired . . . always

A new scientific achievement

EUGENE DIETZGEN CO.

Chicago • New York • San Francisco • New Orleans
Pittsburgh • Los Angeles • Philadelphia
Washington • Milwaukee

Dealers in All Principal Cities

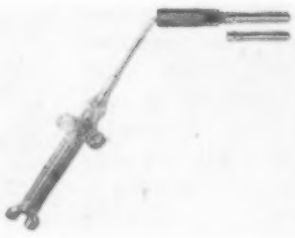
▲ Mention Item NED-832 when writing ▲

HARDNESS TESTING UNIT

Adaptable for testing rounds and flats up to 1 inch, this Ames hardness tester is fully portable. Unit weighs less than 2 pounds and is accurate, fast and easy to use. Anvil, diamond penetrator, Lucite magnifier and stainless steel frame comprise testing unit. Screw action rather than weights and levers is employed to check hardness. Pressure is applied in kilogram loads to force penetrators into material. Applied pressures cause C-frame to spring, thereby moving indicator pointer to graduations on dial. Graduations on barrel dial denote hardness in both Rockwell B and C scales. Tester is rustless and durable and is furnished with wooden carrying box. Made by **Ames Precision Machine Works**, Waltham 54, Mass.

▲ Mention Item NED-833 when writing ▲

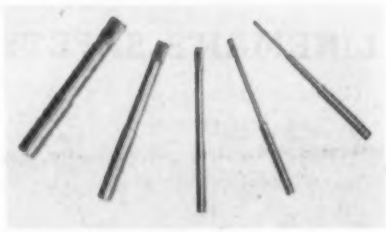
WELDING TORCH ATTACHMENT



Capable of fitting over the end of any standard welding torch tip, this Cesco Puddler torch accessory has two tips for light duty soldering and body soldering. It can be used with acetylene alone and provides ideal flame for body soldering, tinning, silver soldering and heating jobs. Made by **Cesco Products, Inc.**, 30 N. LaSalle St., Chicago 2, Ill.

▲ Mention Item NED-834 when writing ▲

CARBIDE GRINDING WHEELS

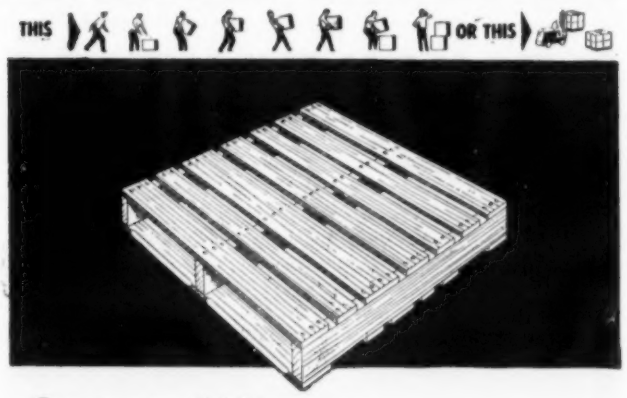


Midget solid carbide grinding wheels, developed for grinding in small holes, are available in standard sizes ranging from 0.030 to 0.250-inch in diameter. Advantages claimed include complete finishing of hole to close tolerance, removal of metal of any hardness including Stellite, and high modulus of elasticity which triples stiffness of cutter shank and permits maximum cutting action without distortion or tapering of holes. Wheels can be resharpened several times with little change in diameter or shape. Maximum production speed and economy are claimed for wheels.

Carbide reamers in sizes from 0.035 to 0.250-inch are available. They will ream and restore to required dimensions small holes that have been distorted by heat treating. No annealing is required. Metal to 62-65 Rockwell hardness can be handled.

Midget carbide burrs are for use in manufacture of steel dies and aircraft engine parts. Plastics also can be worked successfully with these burrs. Manufactured by **Raymac Co.**, 3729 Cass Ave., Detroit 1, Mich.

▲ Mention Item NED-835 when writing ▲



Generalift PALLETS

25 YEARS YOUNG 1922·1947 GENERAL BOX CO.

Throughout America Generalift Pallets, Skids, and Lift Boxes are cutting warehousing, handling, and shipping costs . . . and speeding production! Designed for long life, rough handling, extra heavy loads! Made to your specific requirements. For complete information, write today for your free copy of Pallet Booklet.

ECONOMIZE . . . PALLETIZE . . . GENERALIZE!

GENERAL BOX COMPANY

GENERAL OFFICES: Corner of Illinois and Dearborn Sts., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

▲ Mention Item NED-836 when writing ▲

J-M CUT GASKETS

cut time . . . cut waste!

CUTTING your gaskets from sheet stock? If you need reasonably large quantities of the same size, J-M Cut Gaskets mean less work . . . less waste!

Precision-cut to exact dimensions . . . in round, oval, square, rectangular and special shapes to order. In materials for any requirement—made from the same Johns-Manville Sheet Packing materials known for superior service wherever packing is used.

Tell us your gasket problem—perhaps we can help. Johns-Manville, Box 290, New York 16, N.Y.

Johns-Manville PACKINGS & GASKETS

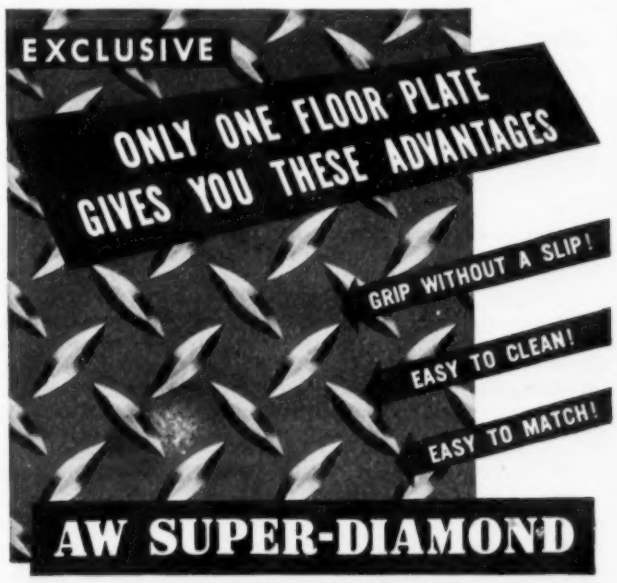
▲ Mention Item NED-837 when writing ▲

NEW CATALOGUE

Just off the press. Eighty pages filled with interesting, informative SLEEVE BEARING data. Lists, describes and illustrates the most complete stock bronze bearing service on the market. Every item listed ready for immediate shipment. Write for your free copy.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
580 S. MILL STREET NEW CASTLE, PA.

▲ Mention Item NED-838 when writing ▲



FLOOR PLATES THAT GRIP

Pattern Illustrated ½ Actual Size

A Product of ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PENNA.

FREE A Copy of Our New 16 Page Booklet L-35. It gives maximum sizes and helpful information. Mail this coupon now.

Name_____
Company_____
Address_____
City_____ State_____

▲ Mention Item NED-839 when writing ▲

..tagged for the big jobs!

HEXACON ELECTRIC SOLDERING IRONS

STROMBERG CARLSON
Westinghouse
MINNEAPOLIS HONEYWELL
Bendix
Western Electric

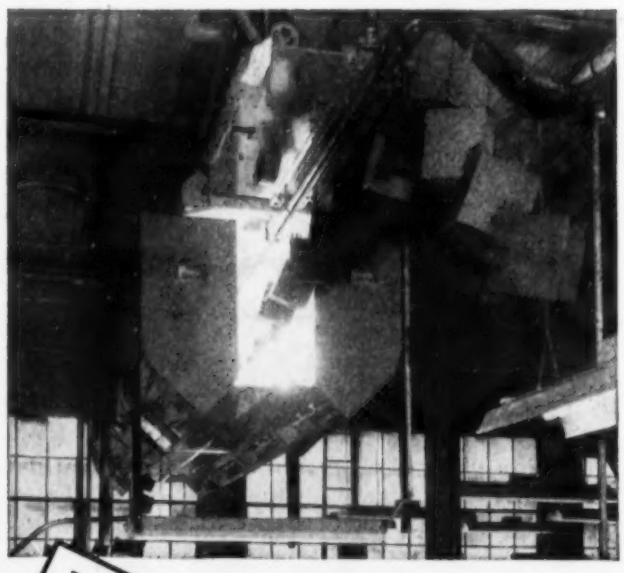
Follow the leaders — for rugged, heavy duty work or for light intricate work — HEXACON is the answer. One reason is "Balanced Heat" which minimizes element burn-outs and tip replacements. Another, is lightweight. Literature is available describing the complete HEXACON line — screw tips and plug tips, from 40 to 700 watts.

HEXACON ELECTRIC CO.
145 W. Clay Avenue
Roselle Park, N. J.

HIGH-QUALITY LONG-LASTING SOLDERING IRONS
HEXACON

▲ Mention Item NED-840 when writing ▲

HOW 5,000 PLANTS CUT COSTS



Typical Example of Savings with INFRA-RED

PRODUCTION TRIPLED — France Mfg. Co., Cleveland, bakes the finish on transformer cases 3 times as fast with EVENRAY than previously with forced air drying. Baking time is only 5 minutes. 3,000 cases are baked in 8 hours with this system. Space is saved by suspending the Evenray oven from the ceiling.

ONLY FOSTORIA EVENRAY EQUIPMENT HAS ALL THESE ADVANTAGES—

1. **Lower Unit Operating Cost** — Greater efficiency of gold reflectors requires lower connected load — provides maximum utilization of energy.
2. **More Uniform Coverage** — Evenray equipment design gives extraordinarily even distribution of energy on products being processed — as little as 2% variation.
3. **Maximum Temperature Range** — Delivers up to 125 BTU's per square inch per hour. Accommodates from 80 watt to 1000 watt lamps for fastest processing according to job requirements.
4. **Maximum Engery Utilization** — Two-wall oven construction and gold interior reflecting surface provide most effective insulation; it puts the energy on the product.
5. **Complete Line of Equipment** — Evenray models are available for spot heating or full ovens, utilizing clear or reflector type lamps; permitting a choice for best results depending on nature of product to be processed. Flexibility of construction permits quick and easy alteration or addition for production changes.
6. **Approved Electrical Construction** — Listed under Re-examination service of Underwriters' Laboratories, Inc.

EVENRAY SYSTEM fostoria FOR BAKING • DRYING • PREHEATING • DEHYDRATING
Trade Mark Reg. U. S. Pat. Off.

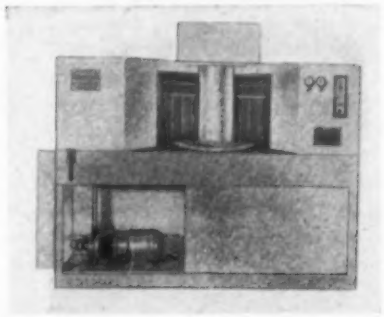
Fostoria invites your request for analysis of any baking, drying, dehydrating or pre-heating problem.

Write for Literature
Ask for brochure EV-1146 which pictures and describes many applications with Evenray Systems.

THE FOSTORIA PRESSED STEEL CORP.
FOSTORIA, OHIO
In Canada — Amalgamated Electric Corp., Ltd., and all Northern Electric Branches

▲ Mention Item NED-841 when writing ▲

TURNTABLE PARTS CLEANER



Designed for handling small and medium sized parts, turntable type washing machine rinses and dries metal parts in baskets, in trays or individually. Only one operator is required to load and unload parts for cleaning. Machine is completely self-contained and requires little floor space in which to achieve average production of 60 baskets per hour. According to size of machine, baskets are 12 x 12 inches, 16 x 16 inches or 20 x 20 inches and load capacities are 1800, 2500 or 3000 pounds. Washer is available in three standard sizes and can be constructed to meet special needs where centering of parts is essential. Heat can be supplied by steam, gas, oil or electricity. Made by **Mabor Co.**, Route 3, Box 77, Rahway, N. J.

▲ Mention Item NED-842 when writing ▲

RIGHT ANGLE DRIVE

Adaptable for driving tube expanders used through small headers and in relatively inaccessible places, this right angle gear drive is made in sizes for 1/2, 3/4 and 1-inch square connections. Gear drive is enclosed in one-piece housing. It has minimum number of moving parts. Unit is completely enclosed. One-shot lubricator provides lubrication that will last for long period. Grip is knurled for ease in handling. Made by **Airetool Mfg. Co.**, 210 Shuey Bldg., Springfield, O.

▲ Mention Item NED-843 when writing ▲

LINEMAN'S SAFETY BELT

Combining features of web and leather construction, No. 625 PP Strauss lineman's safety belt weighs 3 pounds. Belt is made of Diamond Stripe web strap 1-3/4 inches wide and 5/32-inch thick, with tensile strength of 4500 pounds. Inside strap is fitted 4-inch wide web body pad which in turn is lined with soft, pliable leather. Rivet burrs are positioned between web and leather layers. Tool loops are oak tanned harness leather 1-1/4 inches wide, attached to belt by copper rivets. Attachments include snap, leather plier and tape holder. All hardware including slip-ring buckle and Dee rings is constructed from drop forged steel. Made by Portable Safety Div., **Portable Products Corp.**, 501 Blvd. of the Allies, Pittsburgh, Pa.

▲ Mention Item NED-844 when writing ▲

TOUGH TO WELD?

Welding medium carbon steel forgings with "Shield-Arc LH-70"

TRY NEW

"SHIELD-ARC LH-70"

For steels of poor weldability:

Low alloy high tensile steels which cannot be preheated.
High sulphur (free machining) steels.
High carbon, medium carbon steels.
High silicon electrical sheet steel.
For welds to be porcelain-enameled without annealing.

Write for "Weldirectory" giving details and procedures on this new Lincoln Electrode.

THE LINCOLN ELECTRIC COMPANY
DEPARTMENT 256 CLEVELAND 1, OHIO

▲ Mention Item NED-845 when writing ▲

Skilled Lighting FOR SAFER LIGHTING

Wheeler DUST-TIGHT Fluorescent Lighting Units

FOR HAZARDOUS LOCATIONS

For "Skilled Lighting"—plus safety—use Wheeler DUST-TIGHT Fluorescent Fixtures. They meet Underwriters' requirements for Class II, Group G and F, and Class III and IV Hazardous Locations. They bring 64 years of engineering experience in safe lighting to many other locations where lamps, sockets and reflecting surfaces must be protected from non-combustible dusts and vapors.

Class II-G DUST-TIGHT Units are all-steel construction. Made in two and three lamp 48", 40-watt units. Available with Water-White Plate Glass, Tempered Clear Safety Plate Glass or Double Thick Plain Clear Glass hinged, dust-tight covers.

Write for complete data sheet. **Wheeler Reflector Company, 275 Congress St., Boston 10, Mass.**; New York, N. Y. Representatives in principal cities.

Distributed Exclusively by Electrical Wholesalers

Wheeler REFLECTOR COMPANY
Lighting Equipment Specialists Since 1881

▲ Mention Item NED-846 when writing ▲

with a STOW FLEXIBLE TOOLSHAFT YOU CAN Operate in Any Position

For Easy
• Grinding
• Buffing
• Drilling
• Polishing
• Sanding
• Bench Work
• Assembling

THE STOW FLEXIBLE TOOL-SHAFT can be attached to your bench-mounted motor, or to portable power unit, either electric or gasoline. Is easy to connect and disconnect to various tools. And its ample length and easy flexing make it ideal for reaching inconvenient places.

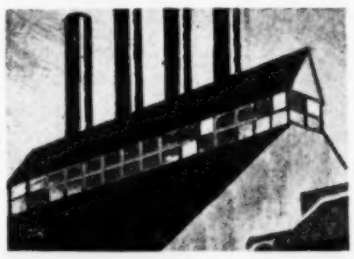
Every shop should have at least one STOW Flexible Tool-Shaft. For, in combination with the proper attachments, mechanics and maintenance men will find it indispensable in hundreds of important operations. Write for full details, or see your mill supplies or hardware dealer.

5-FOOT MODEL $15
6 Ft. Model $16.50

STOW MANUFACTURING CO.
26 Shear St., Binghamton, N. Y.

▲ Mention Item NED-847 when writing ▲

A FLEXIBLE COATING PROTECTS METALS FROM CORROSION, ELECTROLYSIS AND CHEMICAL ACTION



Cabot's Flexiblac is an elastic, chemically inert, black, waterproof paint. Flexiblac offers maximum protection for iron, steel, galvanized iron and other metals exposed to corrosion and rust. Flexiblac *can not* crack or scale . . . does not become porous . . . does not conduct electricity. Flexiblac is not affected by heat, acids or fumes.

Cabot's Flexiblac costs 1/3 *as much as oil paint and* 1/5 *as much as red lead!*

Get Flexiblac at leading mill supply houses or send for FREE SAMPLE TODAY. Samuel Cabot, Inc., 1424 Oliver Bldg., Boston 9, Mass.

Flexiblac

▲ Mention Item NED-848 when writing ▲

NEW CAR SHAKEOUT UNLOADS HOPPER CARS IN 2 MINUTES

Here's a new way to unload packed hopper cars. It's the new Robins Car Shakeout . . . "Job-Engineered" to unload hopper cars faster, cheaper, better than ever.

FASTER, because it unloads cars in minutes—not hours.

CHEAPER, because two men can do the work of six.

BETTER, because it empties cars "broom clean" without harm to either the car or the load.

Solve *your* unloading problems with a "Job-Engineered" Robins Car Shakeout. Write for complete details.

ROBINS CAR SHAKEOUTS

ROBINS CONVEYORS INCORPORATED
Passaic, New Jersey
Division of Hewitt-Robins Incorporated

▲ Mention Item NED-849 when writing ▲

Then use Shenango Penn's Quick-Ship Factory Stock

Centrifugally cast tubular bars in a full range of alloys and diameters are carried in Shenango-Penn stock at all times for immediate shipment.

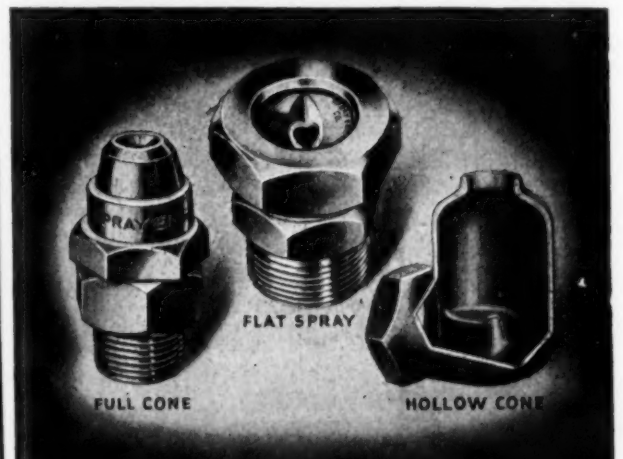
Shenango-Penn centrifugally cast tubular stock offers all the outstanding advantages for which our made-to-order castings are noted—high tensile strength, uniform grain structure, superior density, wear resistance, low porosity, and freedom from hidden defects . . . the result of Shenango-Penn's centrifugal process plus rigid metallurgical control.

Send for technical Alloy Bulletin 143. Then specify Shenango-Penn stock and count on immediate service, lower net cost and better performance.

SHENANGO-PENN
ALL BRONZES
MONEL METAL
ALLOY IRONS

SHENANGO-PENN MOLD CO.
860 W. Third St., Dover, O.

▲ Mention Item NED-850 when writing ▲



SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
106 CENTRAL STREET · SOMERVILLE 45, MASS.

▲ Mention Item NED-851 when writing ▲

SMALL MILLING MACHINE

Measuring 14½ inches high, model No. 0000 knee-type milling machine is designed for manufacture of small parts. Machine has 6-inch longitudinal travel, 1½-inch traverse and 4-inch vertical movement. Table movement is accurate to 0.001-inch and runout of spindle is held to 0.0001-inch. Milling machine can be mounted on bench, table or pedestal which is available as accessory. Drive is by means of double V-belt up through center of column.

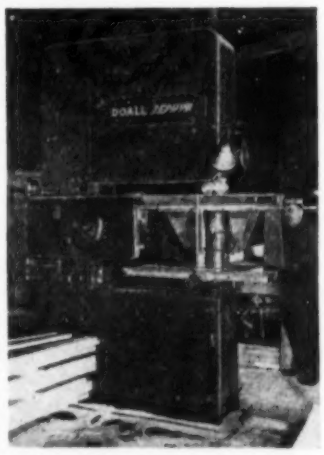
Nine changes of speed are obtainable through countershaft and jackshaft. Speeds from 280 to 11,150 revolutions per minute are possible. Ground alloy steel No. 5 B & S taper spindle is driven by V-belts from countershaft. Solid rectangular overarm slides in scraped dovetail ways and is clamped in place by two locking levers. Arbor support can be supplied with bronze or Torrington needle bearing, oiled from cup on support. Spindle, longitudinal, transverse and elevating screw bearings are permanently lubricated sealed type. Four feed dials have knurled locking screws and are graduated in 100 graduations, each indicating 0.001-inch movement. Recommended motor is ½-horsepower for normal work, but 1/3 or 1/4-horsepower motor can be used for light work.

Milling machine is designed for use in tool and die shops, laboratories, experimental shops and vocational schools, and by instrument makers, watchmakers, gunsmiths, fountain pen and mechanical pencil manufacturers and fabricators of electrical and electronic equipment. Made by Childs & Co., 213 Sixteenth St., Conneaut, O.

▲ Mention Item NED-852 when writing ▲

BANDSAW ATTACHMENT

Converting Zephyr model No. 36 bandsaw for resaw and ripping operations, this bandsaw attachment bolts directly onto column of unit and can be swiveled out of way when not in use. Attachment is constructed for positive feeding and variable speed drive to provide operator with complete control over rate of feed ranging from 0 to 30 feet per minute.



Resaw unit accommodates material up to 12 x 12 inches and is electrically driven on four feed rollers. Its accuracy is such that variation from absolute squareness in cuts at full capacity of machine is less than 0.002-inch. Runout is also less than 0.002-inch. Idler rollers are kept in position against work by spring tension. Indexing of cut is managed by means of calibrated wheel. Made by DoALL Co., 254 N. Laurel Ave., Des Plaines, Ill.

▲ Mention Item NED-853 when writing ▲

SOLVES TODAY'S BIGGEST PROBLEM
IN UNDERGROUND *pipe insulation*

● Every requirement of efficient underground pipe insulation and protection is fulfilled by Ric-wiL tile conduit systems. Strength, water-proofing, alignment, thermal efficiency, speed and economy of installation, are standard elements of Ric-wiL design, materials and engineering—provided by exclusive features which assure maximum protection to pipe distribution lines.

Write for descriptive Catalog No. 44.

RIC-WIL INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO

▲ Mention Item NED-854 when writing ▲

Refillable Draftsman's Pencil

Has Unique Clutch to Protect Leads from Breakage

Instead of the usual metal tubular grip which scores leads and causes breakage, this new Bruning Draftsman's Refillable Pencil No. 3583 has a new type clutch which holds the lead firmly in a non-slip rubber grip. There is no nicking or scoring to weaken leads when clutch is tightened. This pencil holds leads from .079" to .070" including degrees HB to 9H of any popular drafting type lead. Long barrel permits use of full-length leads. Adjustable cap of pencil turns to show exact grade of lead used by owner. Other features include light weight—proper balance—"finger comfort" knurled grip. Professional in appearance—unquestionably a precision tool—this new pencil sells for only $1.00. For full information, write Charles Bruning Company, Inc., 4730-34 Montrose Avenue, Chicago 41, Illinois.

BRUNING *Since 1897*

▲ Mention Item NED-855 when writing ▲

BUSS FUSETRONS

will provide

BURNOUT PROTECTION

for coils — solenoids — transformers

Simply—Inexpensively—and eliminate costly and troublesome replacement jobs

Here's Actual Proof—

Says the Electrical Engineer of a large midwest company. (Name on request.)

"We were having trouble with solenoid coils that operate remotely controlled DC circuit-breakers. For mechanical reasons the breakers sometimes failed to close and when they did the solenoid coil burned out.

"New coils cost $36.00 and in addition we had the trouble and expense of having a man manually operate the breaker 24 hours a day until the coil was replaced.

"We tried small circuit-breakers to protect the coils but they failed. A size small enough to protect did not have enough time-lag to let the coil operate.

"Then we installed 4 ampere 600 volt Fusetrons. They completely solved our problem. The solenoid coils no longer burn out."

Solve Shutdown Problems—with Fusetrons

To safeguard Coils, Solenoids, Transformers, etc., the protective device must have a time-lag long enough to hold normal starting currents or harmless overloads. Yet it must open to protect, should something go wrong.

Fusetrons, because they combine a fuse with a thermal cutout, can give this kind of protection and prevent burnout of such apparatus.

HERE'S ALL YOU NEED TO PROTECT COILS, SOLENOIDS AND TRANSFORMERS

A Fusetron of proper size, plus a fuse block— or a BUSS fuse-holder.

On voltages up to 125, the same accurate, dependable protection can be provided with

a proper size plug Fusetron or a Fustat, plus a fuse block.

Why risk a costly and troublesome repair or replacement job—and take a chance crippling plant or building operations, when Fusetron protection is so simple and inexpensive?

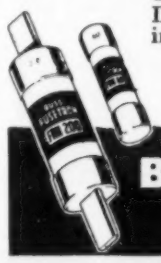
Fusetrons Do Everything Fuses Do, and More—They can . . .

★ Provide simplest way to stop burnouts from single phasing. ★ Entirely wipe out needless blows caused by motor starting currents or other harmless overloads. ★ Give thermal protection to panelboards and switches. ★ Prevent needless blows caused by heating in panels and switches. ★ Permit use of larger motor or adding more motors on circuit without installing larger switch or panel. ★ On new installations, proper size switches and panels can be used instead of oversize. ★ Protect motors against burnout. ★ Give double burnout protection to large motors. ★ Make burnout protection of SMALL motors simple and inexpensive.

Get All the Facts—Get Better Protection

Don't risk avoidable losses. Write for full information on Fusetrons.

BUSSMANN MFG. CO., St. Louis 7, Mo.
(Division McGraw Electric Co.)



BUSS FUSETRONS
Sold through Wholesalers

▲ Mention Item NED-856 when writing ▲

ASK FOR THIS BULLETIN

SHOWS YOU HOW . . .

ONE PIECE OF EQUIPMENT—

- TRANSPORTS WORK
- ELEVATES WORK TO PRESS BED LEVEL
- POSITIONS WORK
- TRANSFERS WORK TO DIFFERENT LEVELS
- LOADS AND UNLOADS MOTOR TRUCKS
- SUPPORTS OVERHANGING WORK

Here are new, ingenious answers to many material handling problems found in almost any plant, provided by a single piece of equipment—Lyon-Raymond Portable Hydraulic Elevating Table. Shows labor-saving applications in actual shop views. Full details of equipment for particular operating conditions, featuring unusual adaptability, also convenience and safety provisions. Special variations (illustrated) offer suggestions your methods engineers may find helpful. More than just "descriptive literature," this bulletin offers real working information. Write for your Free Copy today.

LYON-Raymond Corporation
562 Madison St. Greene, N. Y.

▲ Mention Item NED-857 when writing ▲

ALL-NEOPRENE *Latex* **GLOVES**

For Every Industrial Use

★ Impermeable to practically all acids and caustics
★ Highly resistant to oils and greases

4 POPULAR STYLES

★ **No. 5760-5,** 18" LONG
EXTRA LONG GAUNTLET
GAUGE .030 TO .040
SIZES 10, 11

★ **No. 5737-2,** 14" LONG
LONG GAUNTLET
GAUGE .030 TO .040
SIZES 9-10-11-11½-12

★ **No. 5705-5,** 11" LONG
SHORT GAUNTLET
GAUGE .020 TO .025
SIZES 9-10-11

★ **No. 5702-5,** 10½" LONG
LIGHT DUTY
GAUGE .010 TO .012
SIZES 7-8-9-10-11

KEEP HANDS Safe

REQUEST SAMPLES AND PRICES

SEIBERLING LATEX PRODUCTS CO.
AKRON, OHIO
200 - 5th Ave. Bldg., New York Merchandise Mart, Chicago

▲ Mention Item NED-858 when writing ▲

SYNTHANE TUBING
+IMAGINATION=1000 PRODUCTS

Don't think of Synthane laminated plastics tubing merely as a "rod with a hole in it." Actually, Synthane tubing requires only a little imagination and machining to transform it into hundreds of parts or products. There are many standard grades, diameters and wall thicknesses. Easy to machine. Write for folder of advantages, sizes, grades, colors, etc.

SYNTHANE
TECHNICAL PLASTICS
SHEETS • RODS
TUBES • FABRICATED PARTS • MOLDED-LAMINATED • MOLDED-MACERATED

SYNTHANE CORPORATION
Northeast River Road, Oaks, Penna.
Please send me promptly a copy of your folder "Synthane Laminated Tubing."
Name
Name of Company
Title
Address
City State

▲ Mention Item NED-859 when writing ▲

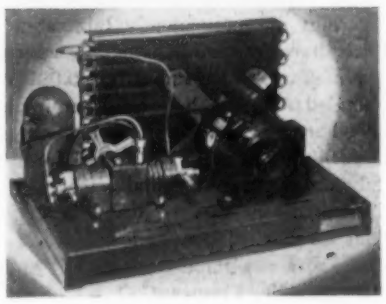
WALL DISPLAY BOARDS

Instructions to plant employees, safety slogans or current plant advertising programs can be introduced and continuously brought to the attention of workers with this easily mounted Minit board. Boards measure 17-1/2 by 24 inches and are covered with clear Plastacele window to keep message clean and in place. Messages are changed by grasping mounting board and Plastacele window between thumb and first two fingers; pushing up to clear lower ledge; pulling down and out; and message is removed and new one inserted.

Boards are made of steel and enameled green. They extend only 3/16-inch from wall. Only a few minutes are required to mount single display unit. Made by **Boyer-Campbell Co.**, Safety Div., 6540 St. Antoine St., Detroit 2, Mich.

▲ Mention Item NED-860 when writing ▲

TWO-STAGE CONDENSING UNIT



Adaptable for use on wide variety of refrigeration appliances including frozen food cabinets, reach-ins and show cases, this small two-stage condensing unit is of package type. It is powered by ½-horsepower motor and is said to be extremely efficient for its compact size. Made by **Controldtemp Corp.**, 236 Butler St., Brooklyn 17, N. Y.

▲ Mention Item NED-861 when writing ▲

DIE HEAD

Having 1/4-inch diameter stock capacity, No. 000 size style SAMA solid adjustable insert chaser die head has 1-1/8-inch outside diameter. Insert chasers are high speed steel and are replaced readily when worn. They extend slightly beyond face of body making possible close-to-shoulder threading. Head is designed to fit No. 1 size holder which has 3/4-inch-24 thread. Stock sizes of chasers are right hand from No. 5 diameter to 1/4-inch National Coarse and National Fine thread series. Special single thread inserts are available for American National form, Whitworth, B. A. Lowenherz and metric threads. Left hand chasers are also available, but require left hand die head. Made by **Eastern Machine Screw Corp.**, Dept. G, Truman & Barclay Sts., New Haven 6, Conn.

▲ Mention Item NED-862 when writing ▲

Resistance Welding News

NEW COST-CUTTERS

Free information on new ways of lowering production costs, improving design and increasing output on metal products from automobile fenders to DDT 'bombs'; from metal cabinets to oil tanks; from outdoor advertising signs to refrigerators; from toy wagon wheels to complete stainless steel truck-trailers; from bearing cups to mercury switch bulbs; mild steel door frames and aluminum window sash; stoves, hoods, wrenches, smoking pipes . . . or what have you. You'll find the case histories from month to month in the oldest exclusive resistance welding publication—the WELDING PICTORIAL, published by Progressive Welder Company, now the world's largest producer of resistance welding equipment. *Write for it today on your company letterhead.*

If you have an immediate problem on re-design, Progressive's Process Engineering Department can help you prove to yourself that:

"IT PAYS TO WELD—PROGRESSIVE"

IT PAYS TO WELD
PROGRESSIVE Welder Co 3050 E OUTER DRIVE • DETROIT 12
RESISTANCE WELDING EQUIPMENT

▲ Mention Item NED-863 when writing ▲

What's a "Veeder-Reading" . . . and how does it tell your future ?

"Veeder-Reading" is a standard term originated by one of the leading electrical manufacturers to designate the figures noted down, at stated intervals, from the face of a Veeder-Root Counting Device installed on a production machine or process.

And Every "Veeder-Reading" is a Direct Reading that tells the story without need of translation . . . tells in bold figures the exact number of turns, strokes, pieces, trips, motions or other performance-units completed by a machine during a minute, hour, shift or other production-period.

VEEDER-ROOT INC.
Hartford 2, Connecticut

▲ Mention Item NED-864 when writing ▲

OHIO "Extra Strength" MAGNETS

INCREASE

PRODUCTION

Rugged, dependable Ohio "Extra Strength" Magnets are being used to UP production and REDUCE overhead costs in many industries. Truly versatile, they load and unload ferrous metals from trucks, freight cars and ships' holds; sweep roads clean of sharp bits of tire-destroying scrap metal; efficiently handle iron and steel in mills and factories; and extract trouble-causing metal from such materials as coal, ore, food and grain.

Ohio "Extra Strength" Magnets incorporate special design features that give power *plus* — greater dependability. It will pay you to investigate the tremendous production economies made possible by Ohio Magnets. Ohio engineers, experts in the solution of metal handling problems, are always available to give you sound engineering recommendations.

THE OHIO ELECTRIC MFG. CO.
Chester Bland, Pres.
5932 Maurice Ave. • Cleveland 4, Ohio

▲ Mention Item NED-865 when writing ▲

TIME, SPACE AND MONEY SAVERS

In most major industries and in almost every state Neff & Fry bins are being used to store and disburse flowable, bulky materials:

Alumina	Ensilage	Magnesium
Cement	Fertilizer	Mortar
Cinders	Foundry Sand	Sand
Clay	Grain	Slag
Coal	Gravel	Soybeans
Coke	Kaolin	Water
Cotton Seed	Lime	Wood Pulp
	Limestone	

Erected by expert crews and guaranteed. 1947 catalog ready.

THE NEFF & FRY CO., Camden, Ohio

N & F BINS

SUPER-CONCRETE OR MONOLITHIC

▲ Mention Item NED-866 when writing ▲

Match the print to the job!

With Ozalid, 10 different types of prints can be made from any drawing!

So consider the job—and make the type of print best fitted for it! 1. Black-line; 2. Blue-line; 3. Red-line; 4. Opaque Cloth; 5. Sepia-line Cloth; 6. Sepia-line Intermediate; 7. Transblack Intermediate; 8. Transparent Foil; 9. Ozaplastic; 10. Dryphoto.

One Job: To combine the details of three separate tracings *on one* print.

The Ozalid Print for the Job: OZALID TRANSPARENT FOIL. Each tracing is reproduced in seconds on a separate piece of Ozalid Foil.

Then the three transparent foils are overlaid in register or the desired type of Ozalid sensitized material . . . and fed into the Ozalid machine. After printing, the foils are returned . . . and seconds later the dry developed Ozalid print emerges —a perfect composite, ready for immediate use.

• The above is just one of hundreds of jobs you can do with Ozalid—faster, more economically.

See the 10 types of prints you can make in seconds . . . and learn complete Ozalid story.

Write for free booklet No. 209.

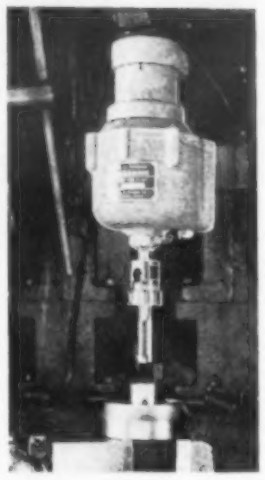
OZALID

DIVISION OF GENERAL ANILINE AND FILM CORPORATION
JOHNSON CITY, NEW YORK

Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

▲ Mention Item NED-867 when writing ▲

HOLE TAPPING ATTACHMENT



Holes can be tapped in materials having hardness range up to that of chrome nickel steel with this universally adaptable Torqomatic torque driven tapping attachment. Tapping is accomplished without appreciable increase in finger tip pressure over that required to operate ordinary drill press. Attachment is available in three sizes. Standard and built-in models can be provided to fit any standard make of drill press or tapping machine. It is suitable for replacement of worn standard attachments. Made by **Charles L. Jarvis Co.,** Dept. 10, P. O. Box 290, Middletown, Conn.

▲ Mention Item NED-868 when writing ▲

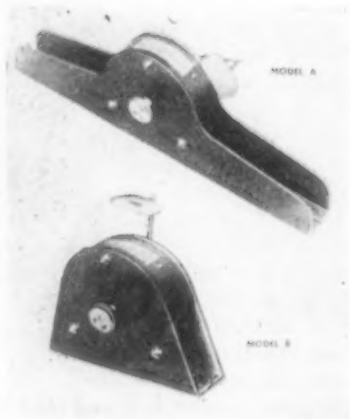
FLEXIBLE LUMINOUS TUBING

Flexible luminous tubing, originally developed for specialized wartime uses, is available in ¼-inch outside and 3/16-inch inside diameters. It offers interesting possibilities for peacetime applications. Tubing is uniformly coated on inside with radioactive material which is clearly and continuously visible at considerable distance in complete darkness. It is semitransparent and moisture and acid resistant.

In original specifications, tubing was prepared in 5-foot lengths and equipped at ends with snap clip fasteners. The armed forces used tubing as marker for night parachute drops and as passageway markers aboard blacked out ships. Made by **United States Radium Corp.,** 535 Pearl St., New York 7, N. Y.

▲ Mention Item NED-869 when writing ▲

VERNIER ANGLE GAGE



Designed for measuring angles and inclinations, improved Clinometer vernier angle gage has aluminum housing, special window for reading and increased stability. Instrument is used on lathes, drill presses, shapers, gear hobbers and other machine tools and for test setups in inspection room. Gage employs free swinging drum graduated 360 degrees and mounted on ball bearings. When device is applied to inclined surface, drum swings to position bringing center of gravity under center line. Degrees of inclination can be read directly from drum. Minutes of arc are indicated by separate vernier scale. Accuracy is to 1 minute of arc. Hand knob brake locks drum in position when desired. This makes it possible to preserve reading when gage has been removed from work. Magnifying glass can be attached to facilitate reading dial. Made by **Engis Equipment Co.,** 431 S. Dearborn St., Chicago 5, Ill.

▲ Mention Item NED-870 when writing ▲

ANODES • ELECTRODES and PLATES...

OTHER STACKPOLE PRODUCTS

Electrical Brushes and Contacts
Spectrographite No. 1
Rheostat Plates and Discs
Packing, Piston and Seal Rings
and dozens of molded carbon, graphite and metal powder specialties

for WELDING, BRAZING, CHEMICAL and ELECTRICAL USES

Here's a source of supply—*one of the oldest in the business*—that can match your requirements for welding, chemical and electrical carbons "on the nose." Chances are standard Stackpole grades will do the trick. If not, our engineers will gladly recommend special "mixes" for special requirements. Write for details.

STACKPOLE

STACKPOLE CARBON CO., ST. MARYS, PENNA.

▲ Mention Item NED-871 when writing ▲

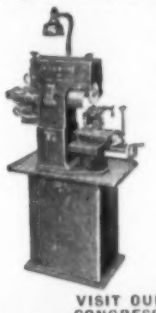
Hammond OF KALAMAZOO

ABRASIVE BELT GRINDERS

Model VH-6WP Wet-n-Dri 6" belts. Used horizontally or vertically.

Model F-2 Flexible Belt, ½" to 2" belts. Especially suitable for irregular shaped parts.

CARBIDE GRINDERS



Chip Breaker and Diamond Finishing Grinder.

10" Wet Carbide Tool Grinder.

VISIT OUR BOOTHS 235 & 239, WESTERN METAL CONGRESS, OAKLAND, CALIF. MARCH 22-27

Hammond Machinery Builders INC.

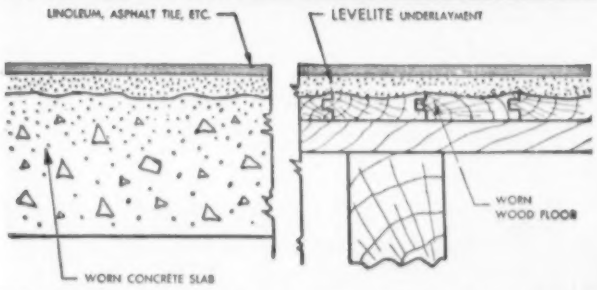
1623 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

▲ Mention Item NED-872 when writing ▲

RESILIENT FLOOR-COVERINGS LAST LONGER WITH

LEVELITE

The Perfect Underlayment



IN corridors, lobbies, foyers, offices . . . on stairs and landings . . . wherever the base-floor has been worn, chipped, cracked, or warped . . . LEVELITE should be applied to make the surface even and level before covering with asphalt tile, rubber tile, vinyl tile, linoleum, or carpet.

Worn surfaces, cracks, ridges, and gaps produce harmful effects in visible coverings and the causes are often unseen until too late for remedy.

Write for illustrated folder and name of nearest contractor.

A Floor Crafters Product by

SELBY, BATTERSBY & CO.

Wilford Building, 33rd & Arch Streets, Philadelphia 4, Pa.

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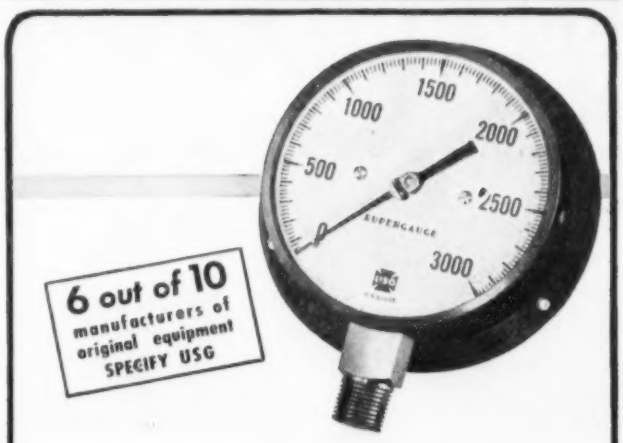
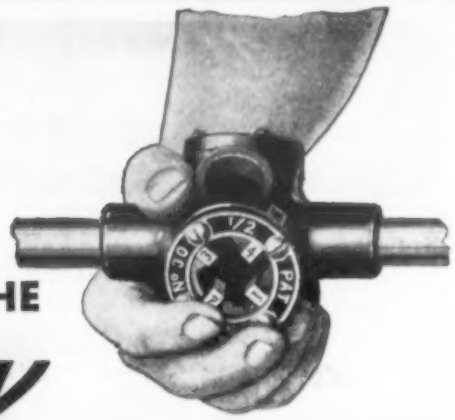


6 out of 10 manufacturers of original equipment SPECIFY USG

Tomorrow's accuracy is here today in the new U. S. Supergauge. Get complete information about this superb instrument now.

▲ Mention Item NED-874 when writing ▲



GETS THE

OK OF THE MAN ON THE JOB

Accurate, dependable TOLEDO Pipe Tools are engineered for *easy-threading, greater speed,* and *lower costs!* Preferred by experienced hands for nearly half a century.

3-WAY THREADER (illustrated)... compactly designed. Lightest, smallest and easiest to operate of all 3-way tools! No. 30 threads ⅜" to ¾" pipe, wt. 4¾ lb. No. 31 threads ½" to 1" pipe, wt. 7 lb. Efficient, reliable. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office, No. 2 Rector Street Bldg.

TOLEDO

PRECISION PIPE TOOLS

▲ Mention Item NED-877 when writing ▲

MADE TO ORDER

Unusually accurate metal parts including operations such as heading, rotary swaging, roll threading, fluting, knurling, pressing, milling, turning, grinding, forming, etc.

Single and double tenon studs turned on specially designed machines, held to close diameter tolerances, with no cut-off burrs.

Uniform heat treatment assured with the very latest equipment.

The Torrington Company
SPECIALTY DEP'T.
Torrington, Conn., U.S.A.

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300 TWIN BENDS per hour!

With Two DI-ACRO BENDERS

A difficult production problem of forming two bends in a long length of tubing was solved by "teaming up" two DI-ACRO Benders as illustrated. This dual-forming arrangement saved installation of special machinery. Two accurately formed bends are obtained in one operation—without distortion of the tube and at a cost competitive to power operated equipment. More than 300 pieces are completed per hour—600 individual bends.

"DIE-LESS DUPLICATING" Often Does it Quicker WITHOUT DIES

This is but one example of how DI-ACRO precision machines—Benders, Brakes and Shears—can accurately and economically duplicate a great variety of parts, pieces and shapes, without die expense. Write for catalog—"DIE-LESS DUPLICATING".

◄ DI-ACRO is pronounced "DIE-ACK-RO"

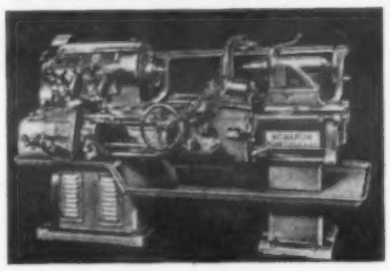
DI-ACRO PRECISION MACHINES DIE-LESS DUPLICATING

O'NEIL-IRWIN MFG. CO.

354 EIGHTH AVENUE • LAKE CITY, MINNESOTA

▲ Mention Item NED-879 when writing ▲

CONTOUR CUTTING DEVICE

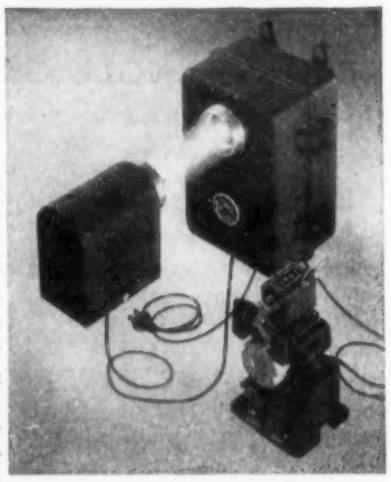


Adaptable for use on any new 14, 16, 18 or 20-inch Monarch Toolmaker or engine lathe, Air-Tracer contour cutting attachment (*Item NED-2248, April '46*) will produce work pieces with contours to match those of master template within limit of 0.001-inch. Device combines tracing unit with hydraulically operated power circuit and can be used for any increasing contour or multiple diameter work. Mandrels, punches, dies, spinning chucks, valves, metering pins, nozzles, impellers, molds and step shafts are typical examples of work for which attachment is recommended. Thin metal templates can be used because air pressure of tracer against template is only a few ounces.

In operation, template is scanned by spring loaded tracer working on air gaging principle. Air loading pressure established controls operation of tool slide through hydraulic relay valve. Change in template shape increases or decreases air loading pressure and movement is amplified into hydraulic relay in ratio of 1 to 100. Actuation of relay valve is by flexible metal bellows. Lathe carriage is moved by usual power drive or handwheel. Because tool slide is set at 45-degree angle, tool follows path relative to work which is the resultant of movement of carriage and hydraulically operated tool slide. Position of template support is adjustable along the rail and micrometer adjusting screw is provided to permit critical longitudinal adjustment of template. Made by **Monarch Machine Tool Co.**, Oak St., Sidney, O.

▲ Mention Item NED-880 when writing ▲

PHOTOELECTRIC COUNTER



Completely packaged and easily installed, type P1 general purpose photoelectric counter will count small or freshly painted products, hot objects, leather goods, glass units, tubes and bottles, as well as output of punch presses and screw machines. Unit will count up to 600 objects per minute and will count up to total of 99,999. It is returned to 0 by reset knob. One or more counters, each containing counter face and reset knob, can be placed at any location along loading chute or conveyor and wired to main control. Remote control is thus effected. Selective counting by height or length can also be accommodated.

Counter unit requires no wiring other than line cord with male plug connection which draws power from any standard lighting outlet. This supplies power for light source and electric counter which in turn have cables and plugs for connection to control. Entire combination of equipment can be installed quickly and without need of electrician. Made by **Photoswitch, Inc.**, 77-89 Broadway, Cambridge 42, Mass.

▲ Mention Item NED-881 when writing ▲

You know how tight with APCO TENSION DRIVER

$5.95

Here's the driver you've been waiting for . . . a rugged, fool-proof, ratchet-free torque tool that'll save you many an hour on scores of different assembly jobs. Broken screw days are over when you use APCO.

Just check the safe load on the free chart supplied with every driver and go to work. Four big, easy-to-read brass dials let you see the exact torque from *any* position.

Every driver supplied with three fine tool steel heads to adapt the driver instantly to slotted, Phillips or ¼" socket drives.

Send for descriptive circular today . . . or better still, order one and see for yourself now the easy way this *new* APCO TENSION DRIVER saves you time, material and accidents.

No. B-25, O-25 inch pound. Length 12". Weight ¾-lb. Non-slip, non-chip, non-conductor handle.

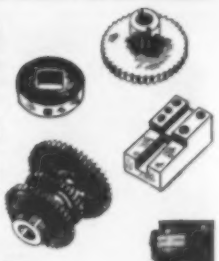
APCO MOSSBERG CO.
Attleboro, Mass. U. S. A.

▲ Mention Item NED-882 when writing ▲

HEAT TREAT

HARDEN and TEMPER

Small Parts in Your Own Plant



SAVE TIME and MONEY

With These Versatile Cooley Furnaces

- One Model to operate at 2000° F.
- One Model, 2 sizes, to operate at 1850° F.
- Use for both hardening and tempering.
- Simple and economical to operate.
- Positive Control over high and low heats.
- Uniform temperatures assure results.

Profitable Uses for Cooley Furnaces

1. Hardening, drawing and tempering small batches.
2. Quickly normalizing and annealing small parts.
3. Convenient for high speed pre-heating.
4. Expedites emergency repairs.
5. Predetermining production heat treating technique.
6. HARDEN and DRAW in the SAME FURNACE with assured temperature control at either heat.

Cooley furnaces are easily installed, quiet in operation, and create no fumes or odors.

THREE SIZES—MH-3, MH-4—1850°F.; MH-5—2000°F.

Type	Chamber Capacity	Amps 115 V	Watts	Amps 230 V	Price
MH-3	8"W 6"H 14"L	29.6	3400	14.8	$146.00
MH-4	10"W 6"H 18"L	—	4500	19.6	$222.50
MH-5	8"W 6"H 14"L	—	4800	20.9	$340.00

All furnaces complete with Hearth Plate.

AUTOMATIC CONTROL—Indicating Controlling Pyrometer—Thermo-couple and lead wire—approximately $150.00.

TWO NEW EXTRA FEATURES AVAILABLE

1. Counter weighted Vertical Lift Door supplied at $20.00 additional on MH-3, MH-4, standard with MH-5 Model. 2. For Heavy Gauge Steel Stand, with shelf, add $35.00 to regular price.

FREE! HEAT TREATING HELP

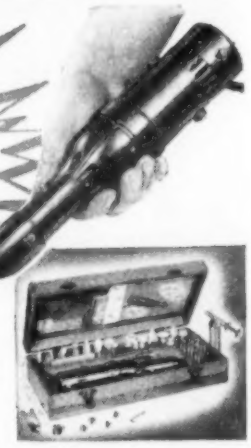
State your problem. Write for Bulletin No. 56—no salesman will call.

COOLEY ELECTRIC MANUFACTURING CORP.
58 South Shelby Street Indianapolis 7, Indiana

INDIANAPOLIS MACHINERY EXPORT CORP.
Export Manager, 44 Whitehall St., New York, N. Y.

▲ Mention Item NED-883 when writing ▲

New



PRECISE 40

1/5 H.P. - 40,000 R.P.M.

USE IT FOR FASTER, SMOOTHER WORK ON STEEL, IRON, BRASS, BRONZE, WOOD, PLASTICS, GLASS AND OTHER MATERIALS.

GRINDS
MILLS
DEBURRS
ENGRAVES
POLISHES
FINISHES

Speed with power with precision—that's the new PRECISE 40. Surpasses our own PRECISE 35 which outworked every tool in the field. In strong, light plastic case, PRECISE 40 weighs only 40 oz.—packs a record 1/5 H.P. New type quill mounts precision collet chuck or grinding wheel arbors of various sizes; push-button spindle lock for quick tool change. 90% greater cooling; four oversize ball bearings. Quickly lubricated by pressure gun through ball-valve inlets. Tool mounts in vise, lathe, stand, or milling machine or can be used with PRECISE accessories for special applications. Guaranteed shockproof without ground wire.

Send for this 6-page Bulletin
PRECISE PRODUCTS COMPANY
1346 CLARK ST., RACINE, WISCONSIN

PRECISE 40

▲ Mention Item NED-884 when writing ▲

For Dust and Paint Spray

Full-Vision RESPIRATOR HOOD

weighs only 9 ounces

New design for all operations involving fine nuisance dusts and paint spray.

Light and comfortable. Provides full, unobstructed vision. Window replaced quickly and easily when necessary without the use of tools.

Write for Bulletin NE-27

IPCO Safety Equipment for all Industries

INDUSTRIAL PRODUCTS COMPANY
2807 N. FOURTH STREET • PHILADELPHIA 33, PA.

▲ Mention Item NED-885 when writing ▲

SURETY'S NEW GRIPTITE FINISH!

now available on Surety Sureseal synthetic rubber gloves

. . . THIS NON-SLIP SURFACE WILL NOT PEEL OR RUB OFF . . .

● NO SLIPS — even when working in liquids! New Griptite gloves never shed their unique rough finish. In all sizes, styles. Especially valuable for work in chemicals and acids. . . . Write for bulletin.

THE SURETY RUBBER CO. CARROLLTON, OHIO

▲ Mention Item NED-886 when writing ▲

SPEED PRODUCTION WITH INDUSTRIAL PNEUMATICS

CONSIDER THESE ADVANTAGES OF INDUSTRIAL PNEUMATIC TIRES

1. Protect floor . . . floor coverings
2. Safeguard fragile loads
3. Eliminate jar and shock to operator
4. Provide flotation mobility on soft and rough surfaces
5. Avoid breakage and spillage
6. Eliminate noise
7. Designed for both high and low speed service
8. Make light work of heavy material handling

Factory Floor Trucks equipped with General Industrial Pneumatic Tires manufactured by Orangeville Manufacturing Company, Orangeville, Pennsylvania.

Dept. 5
THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO

The GENERAL TIRE — INDUSTRIAL PNEUMATIC TIRE • TUBE • WHEEL UNITS

▲ Mention Item NED-887 when writing ▲

HAND LIFT TRUCK

Both pallet and platform models of this Power Jacklift electrically operated hand lift truck are available. Trucks feature vertical handle operation and electric braking. Electric Master Drive that powers unit is easily replaceable. Steering arc for handle assembly is 200 degrees. Deadman handle provides for smooth immediate stopping the moment handle is released. Gear drive and wheels are mounted on ball bearings, totally enclosed and packed in grease for dependable operation. Trucks are available in several lengths and platform truck is available in both wide and narrow models. Made by **Lewis-Shepard Products, Inc.**, 302 Walnut St., Watertown 72, Mass.

▲ Mention Item NED-888 when writing ▲

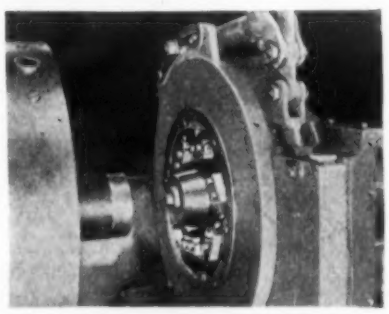
RAILROAD CAR LOCKING TOOL

Designed for closing and locking latch type hopper bottom railroad cars, this Speed-Up Safety Tool is easy to use, does job in practical manner and minimizes possible personal injury. Tool is made from round bar steel. Link and hook are located on one end and L-shape is forged on other end. Two notches provided in L-shaped end prevent slipping. Price of tool is $12.50. Made by **Industrial Products Co.**, 2807 N. Fourth St., Philadelphia 33, Pa.

▲ Mention Item NED-889 when writing ▲

PIPE CENTERING PILOT

Designed for use on company's 8-5/8 and 13-3/8-inch receding chaser pipe threading and cutting off machines, this centering pilot centers pipe true with die head to assure concentric threads and maximum threading speed. Chatter is eliminated and chasers can be set farther back of center to increase clearance back of cutting head. This setting of chasers results in increased tool life and improved thread finish.



Spring pilot is bolted onto rear of cross rail. Since this necessitates removal of cutting off slides, machine is limited to threading only when equipped with pilot. When pilot is changed for different diameters of pipe, it is necessary to remove only one screw in center of pilot. In operation, pilot is forced forward by spring and engages bore of pipe prior to pipe advancing to chasers. The 10-degree angle of pilot permits its use on different wall thicknesses of pipe. Made by **Landis Machine Co.**, 55 Fifth St., Waynesboro, Pa.

▲ Mention Item NED-890 when writing ▲

RULE OUT Wasted time

Too narrow a face on a grinding wheel can mean too much time on the job. Why use a wheel with a 1" face, for instance, when one with a width of 1½" to 2" can increase surface contact 25 to 50%? This time saving efficiency is yours in the complete line of Simonds Abrasive wheels. Whether for rough snagging or for precision finishing there is a Simonds wheel to measure up to your most exacting requirements for maximum production with speed and efficiency. A copy of the Simonds Abrasive Data Book is available to guide your selection. Write for yours today.

For assistance in requisitioning consult Simonds Abrasive distributors located in all principal cities.

SIMONDS ABRASIVE CO.

SIMONDS ABRASIVE COMPANY is a division of SIMONDS SAW AND STEEL CO. Other divisions: Simonds Steel Mills, Simonds Canada Saw Co., Ltd.

SIMONDS ABRASIVE COMPANY • PHILADELPHIA 37, PA.
DISTRIBUTORS IN ALL PRINCIPAL CITIES

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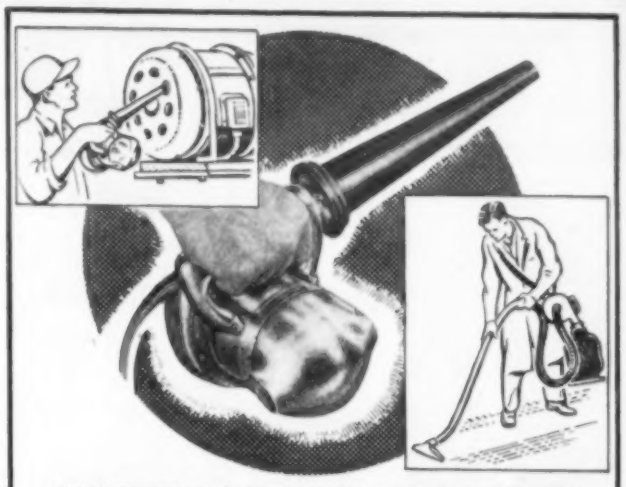


TORNADO'S TWO-IN-ONE ALL-PURPOSE BLOWER

BLOW out the dust before your motor "blows out". Keep it dust-free with TORNADO Portable Electric Blower. Cleans motors, generators, shafting, etc.

Operates at a cost of less than 3c an hour. 1 h. p. G. E. universal motor. Plugs in at any electric outlet. Produces clean, dry air at 295 m. p. h. Quicker, cleaner clean-ups. Blower convertible into Vacuum Cleaner for cleaning floors, ceilings, etc.

Request details and FREE TRIAL Offer

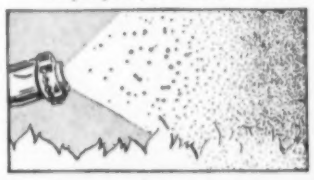
BREUER ELECTRIC MFG. CO.
5092 Ravenswood Ave. Chicago 40, Illinois

with BREUER INDUSTRIAL TORNADO BLOWERS and CLEANERS

▲ Mention Item NED-892 when writing ▲

LESS DAMAGE LESS DANGER FROM SURFACE FIRES

in paper, wood, rubbish, inflammable liquids



WaterFOG effectively blankets and cools a wider area INSTANTLY

Rockwood SG40 Nozzle gives you WaterFOG or straight stream as you will

A convenient control converts the SG40 Nozzle from WaterFOG to straight stream

WaterFOG's wide-area coverage and *cooling, confining, smothering* action snuff out surface fires in record time. Allows fire fighters to advance faster *safely*. Reduces water requirements. More and more fire departments are adopting WaterFOG Nozzles as standard equipment. Approved by UNDERWRITERS' LABORATORIES, INC. and FACTORY MUTUAL LABORATORIES. Write for Bulletin C-501.

ROCKWOOD SPRINKLER COMPANY
44 Harlow St., Worcester 5, Mass.

Specialists in Fire Protection Engineering, Equipment and Installation Since 1907

▲ Mention Item NED-893 when writing ▲

STRUTHERS-DUNN HEAVY-DUTY RELAYS

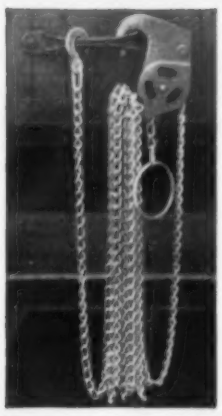
In addition to many standard types of large power relays, Struthers-Dunn can supply adaptations for applications involving high inrush loads, radio-frequency or high-voltage insulation, extra long life, and other special service conditions. All units include three point armature support for exceptionally quiet operation, wiping action on the fine silver contacts and numerous other features.

Write for Data Section 4671 for detailed information on both standard and special types.

STRUTHERS-DUNN, INC.
146-150 N. 13th St., PHILA. 7, PA.

▲ Mention Item NED-894 when writing ▲

WORLD'S EASIEST WAY
TO OPEN ANY BOX CAR DOOR



MONARCH
ONE MAN
CAR DOOR OPENER

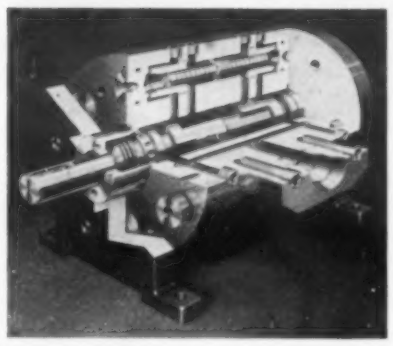
One man can open the most binding balky box car door with the Monarch Car Door Opener. Get greater safety . . . speed loading and unloading schedules . . . order an ample supply to fill your needs today!

• *No strained muscles. No slips or falls. No broken arms, legs or mashed fingers. No fatalities. No time wasted. No "gangs" needed. No time loss. Write for free descriptive literature.*

MINING SAFETY DEVICE CO., Dept. NE-2, Bowerston, O.

▲ Mention Item NED-895 when writing ▲

HYDRAULIC BOOSTER



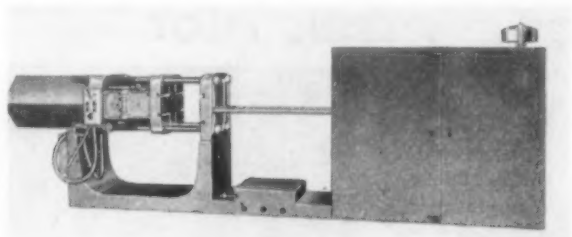
Capable of supplying pressure of up to 7500 pounds per square inch, this Hydro-Power oil hydraulic pressure booster is multiplunger intensifier unit that multiplies circuit pressure by as much as three times. Two available boosters have 35 and 100-gallon per minute input and each size can be furnished in pressure ranges of 2¼ to 1 and 3 to 1. Volumetric output is in inverse proportion to pressure ratio.

Units operate without appreciable increase in system horsepower. They can be installed easily in new or old hydraulic circuits and where higher pressures are needed constantly or intermittently. Body of booster houses entire assembly and provides means of porting both suction and discharge. Flanged connections provide easy means for connecting unit to system. Booster unit consists of cylinder block having nest of six parallel bores, each fitted with reciprocating, double acting piston. Central rotating valve member connects pistons with source of pressure fluid. As valve rotates, oil connections are made successively to each piston, alternating from one end to the other to give uninterrupted pressure flow. Made by **Hydro-Power, Inc.**, Belmont & Sheridan Aves., Springfield, O.

▲ Mention Item NED-898 when writing ▲

INJECTION CASTING MACHINE

High speed cold chamber injection type model HD103 molding machine is capable of casting up to 2.6 pounds of aluminum or a proportionate volume of other base metal alloys



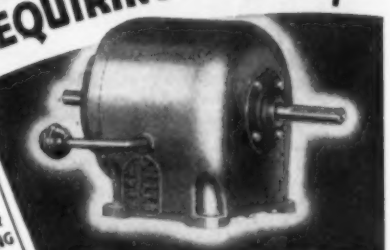
at maximum production rate of 500 shots or cycles per hour. Machine is comparatively small. It is equipped with center gate and provision is made for conversion to hot chamber for casting lead, zinc and tin base alloys. Engineering specifications provide for normal die dimensions of 13½ inches vertical by 23 inches horizontal with a dimension of 10 inches between dies in open position.

Injection piston has diameter of 4 inches with a stroke of 13 inches. Operating under 1000 pounds per square inch oil hydraulic pressure, a pressure of 5000 pounds per square inch is applied to molten metal injected into die cavity. Controls are semiautomatic with automatic time and cycle adjustments of die opening and closing. Foot switch controls injection operation. Heating furnaces can be fired by either gas or oil to suit requirements. Machine is actuated by 5-horsepower electric motor and by Vickers hydraulic pump. Made by **H. L. Harvill Mfg. Co.**, Corona, Calif.

▲ Mention Item NED-899 when writing ▲

ATTENTION!
Manufacturers and Users

LIMA NOW OFFERS A Multi-Speed GEAR REDUCTION DRIVE FOR MACHINERY REQUIRING UP TO 1hp.



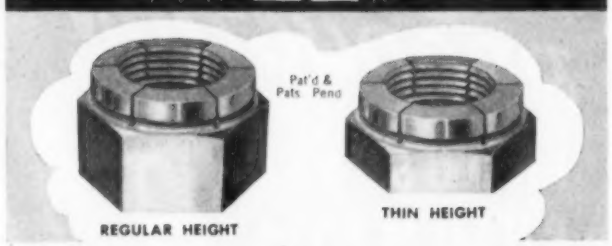
ADAPTABLE TO... MACHINE TOOLS, CONVEYORS, BLOWERS, MIXERS, ROLLS, DRYERS AND MANY OTHER MACHINES REQUIRING SELECTIVE... SPEEDS

TYPE RD ILLUSTRATED DESIGNED FOR SEPARATE MOTOR DRIVE
Other Integral LIMA Gearshift Drives
Single phase ⅙ and ¾ hp.
Polyphase ⅙ hp to 20 hp.

THE LIMA ELECTRIC MOTOR CO.
347 Findlay Road
LIMA, OHIO
REPRESENTATION IN MOST PRINCIPAL CITIES
LIMA GEARSHIFT DRIVES
LIMA PEDESTAL GRINDERS — LIMA ELECTRIC MOTORS

▲ Mention Item NED-901 when writing ▲

FLEXLOC



SELF-LOCKING NUTS

CAN YOU BE SURE THAT A PLAIN NUT WON'T SLYLY UNWIND ITSELF? If not, then what you need is the All-metal, One-piece "Flexloc," which is a self-Locking Nut that won't budge, except when a wrench is used.

"Flexloc" packs maximum usefulness in minimum space because it is rugged, locked, compact—and is therefore, becoming increasingly popular and this applies alike to U.S.S. and S.A.E. thread series. Every thread—including the locking threads—takes its share of the load.

Covers a wide range of tolerances—from low #1 to high #3. Can be used over and over again without losing much of its locking ability.

Being a "stop" nut, it stays locked in any position on a threaded member.

"Flexloc" Thin Nuts are especially popular, because their tensile is so high.

Sizes from # 6 to 1" in diameter—millions in use!

Convince yourself with a few free samples

OVER 43 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.
JENKINTOWN, PA. BOX 581
BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

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Cold-Headed Specialties

HASSALL cold-heading may solve your immediate special part problem . . . Special nails, rivets and threaded parts made in diameters from 1/32" to 3/8"—lengths up to 6" . . . Rivets 3/32" diameter and smaller a specialty . . . Variety of metals, finishes and secondary operations . . . Economy, quality and quick delivery in large or small quantities . . . Tell us what you need . . . We will answer promptly. ASK FOR FREE CATALOG. 3-color Decimal Equivalents Wall Chart free on request.

JOHN HASSALL, INC. 398 Oakland St. Brooklyn 22, N.Y.
Manufacturers of Cold-Headed Specialties—Established 1850

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Control
Cutting-Oil Dermatitis!

Send For FREE Report!

Quite often rancid soluble-oil emulsions are the source of machinists' dermatitis infection. Don't wait until infection strikes your shop. You can prevent this costly shop disease, simultaneously keep tanks, supply lines and pumps clean and sanitary for better cutting and grinding, with

Specialized Oakite
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Interesting Oakite Service Report gives complete details of anti-rancidity treatment for cutting-fluid solutions. Write NOW for your free copy to Oakite Products, Inc., 32 Thames St., New York 6, N. Y.

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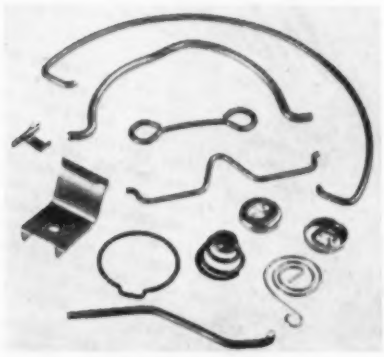
Coil Spring Says:

"We can help you break all kinds of records with BETTER SPRINGS!"



—your *production* and *performance* records, that is. Because, all phases of our operations, from original spring design, to final inspection testing, are intent on achieving *better results* for you. No order too large or too small. *Ask for full details.*

The U. S. STEEL WIRE SPRING Co.
7800 FINNEY AVE. • MICHIGAN 6318
CLEVELAND 5, O.

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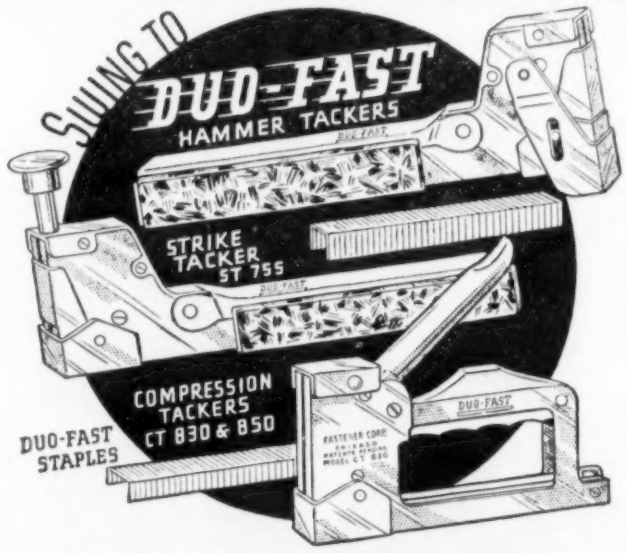

TACK THE EASY WAY!

Do your tacking the modern, fast, EASY WAY, with the versatile DUO-FAST TACKERS.

Whether you are lining a box car, tacking leatherette on chair seats, or constructing radio cabinets, the DUO-FAST TACKERS will do a neat, speedy, efficient job.

DUO-FAST TACKERS and the wide range of DUO-FAST staple sizes will solve your most difficult tacking problem.

SAVE TIME AND MONEY IN YOUR PLANT—Investigate these easy-to-operate DUO-FAST TACKERS. Fully guaranteed.

Specify your Requirements

WRITE TODAY **FASTENER CORPORATION**
876 Fletcher Street • Chicago 14, Illinois

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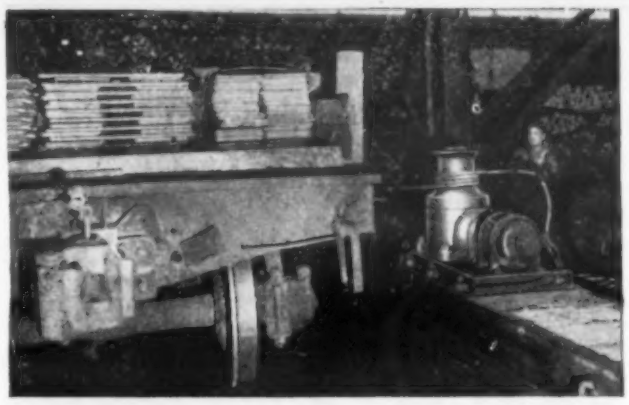


ONE MAN with L-B CAR SPOTTER

Moves Cars of Steel . . . Easily!

Alert operators are using the Link-Belt Electric Car Spotter to save time and manpower on dozens of heavy, backbreaking jobs of moving that formerly called for gangs of men. Now one man, with this motor-driven capstan, pulls 5,000 and 10,000 lbs. at 45 ft. per minute. Stationary or portable styles; integral or separate motors, 5 or 10 H.P. Why not get the facts?

WRITE TODAY for illustrated Book No. 1992. It gives full details.

LINK-BELT COMPANY
2410 W. 18th St.,
Chicago 8, Illinois 10,430

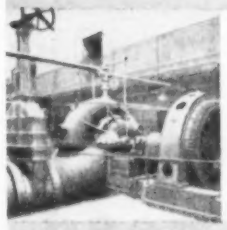
▲ Mention Item NED-904 when writing ▲

INDUSTRY BANS RUST AND CORROSION *with* EVERLASTING FASTENINGS

Few industries can escape the destructive effects of rust and corrosion but *all* industries can reduce their costly ravages in maintenance and breakdown.

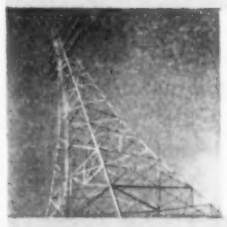
Here are five industrial applications where Harper's EVERLASTING FASTENINGS have licked rust and corrosion.

MONEL STOPS CORROSIVE CHEMICALS Problems in salt production have been solved by using Monel bolts. In mining, treating and handling of many chemicals, nonferrous alloys are the answer to efficient operation.



BRASS GUARDS WATER SYSTEMS In valves and pumps that compose the heart of water works, Brass fastenings help in eliminating the most common cause of replacement—rust.

STAINLESS STEEL SOLVES OIL PROBLEMS Acids and gases at high temperatures attack metal but Stainless Steel alloys cut refinery replacements to a minimum, assure years of continued operation.



UTILITIES CHOOSE SILICON BRONZE Weather is the bug-a-boo in power lines and other utility applications. Silicon Bronze Bolts reduce season "cracking" and maintenance costs.

NAVAL BRONZE WINS ON THE SEA Marine applications demand high strength plus resistance to salt air and water. Naval Bronze fastenings have proved their dependability in marine diesels and ship fittings.

THE H. M. HARPER COMPANY 2628 Fletcher Street Chicago 18, Illinois

Branch Offices:
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Philadelphia
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Representatives in Principal Cities

Call upon Harper to solve fastening problems in your industry.

HARPER
Everlasting Fastenings
Chicago

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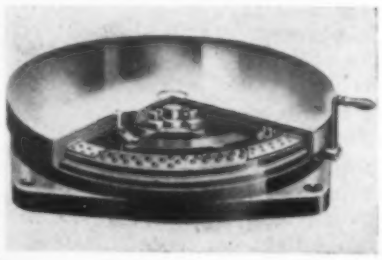
INDEXING TABLE



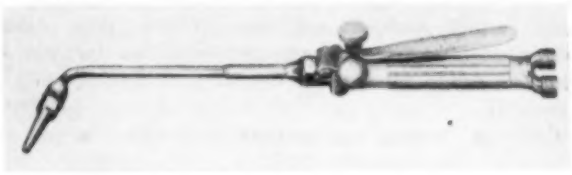
Indexed manually and located automatically, Robbins index table provides for accurate work positioning in wide variety of production operations. To index, crank handle is turned to horizontal position, thus disengaging large diameter locking pin. As table is indexed, handle is released and table locked in next position automatically. Number and location of index positions can be determined to suit any application. Safety stop permits indexing in one direction only.

Table is supported by large ball bearing which eliminates out-of-parallel conditions resulting from vertical thrust from cutting tools or heavy parts located off center on table. All wearing parts are hardened and ground for maximum life and are concealed from dirt, chips and abrasives. Made by Robbins Engineering Co., 324 Midland Ave., Detroit 3, Mich.

▲ Mention Item NED-906 when writing ▲

WELDING TORCH

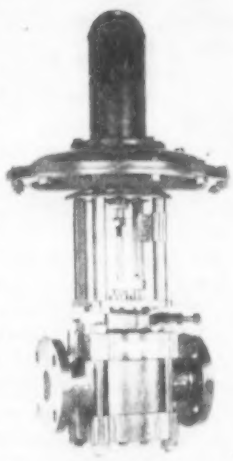
Incorporation of full handle length control lever which permits maximum operating range and easy handling is feature of model W-46 Weldit welding torch. Only finger tip



pressure is required to shut off or release gas. This torch also has built-in automatic Gasaver for conservation of welding gas. Made by Weldit, Inc., 990 Oakman Blvd., Detroit 6, Mich.

▲ Mention Item NED-907 when writing ▲

DIAPHRAGM MOTOR VALVE



Intended principally for chemical service applications, Valvrator line of diaphragm motor valves is available in several chemically resistant materials. Valves are of dished bonnet construction with flush seated bodies and through bolts. Since no bonnet flanges are included in body construction, compactness, minimum weight, simplified cleanout characteristics and fabrication of unit from wide range of materials are possible. Body materials from which valves can be made include iron, bronze, stainless steel, carbon steel, hard lead, Haveg, hard rubber, Monel, nickel, Hastelloy and porcelain. Sizes from 1/4 to 1 inch screwed and from 1 to 3 inches flanged, all of 150 pounds per square inch construction, are available. Made by Fischer & Porter Co., Dept. 1D-7, 928 County Line Rd., Hatboro, Pa.

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Investigate This New Development in Air Handling!

(Trade Mark Registered)

Corrects Air Starvation

Make-Up AIR Units balance minus pressures caused by exhaust fans removing gases, dust and fumes in large volume.

These compact, ceiling-suspended units replace the air from outside, warmed, cleaned and delivered in an even flow without drafts or noise.

Four sizes, 5,000 CFM to 20,000 CFM.

Complete description in ***Bulletin 453.***

The NEW YORK BLOWER COMPANY

3166 So. Shields Avenue Chicago 16, Illinois

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LOOK!

BY THE MAKERS OF RELIANCE ELECTRIC MOTORS

A QUALITY-BUILT *Electric* SPEED INDICATOR

. . . only $50 Complete
(less in quantities of two or more)

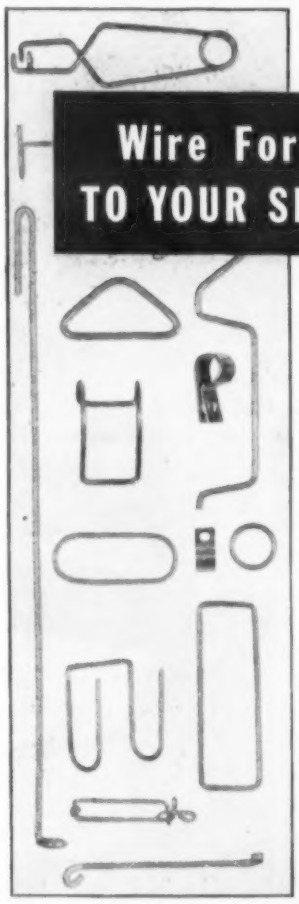
- **IMPROVES** quantity and quality of machine output.
- **DETECTS** machine troubles before costly repairs become necessary.
- **REDUCES** spoilage of materials in process.

This sturdy instrument gives accurate speed indications between 100 and 5000 rpm.—special scales available for other indications. Get all the facts — write for Bulletin 406 today!

RELIANCE ELECTRIC & ENGINEERING COMPANY
1082 IVANHOE ROAD • CLEVELAND 10, OHIO

Sales Offices in Principal Cities

▲ Mention Item NED-910 when writing ▲



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● Supplying wire forms in a wide variety of finishes is routine business with us. Whether you want nickel, cadmium or zinc plating, bonderized enamel, parkerized or copper coated finishes—you can count on Jeschke.

Complete forming, stamping, cut-threading and butt welding of light metal parts are also among our services. Fast, automatic machines and years of experience assure precision, volume production and satisfaction.

Let's look into that problem of yours. Send sample, blueprint or drawing. No obligation, of course.

JESCHKE

WIRE AND SPECIALTY CO.
200 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

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Get the copies you need—*when you need them!* APECO copies anything written, typed, printed, drawn or photographed—even if on both sides! With this handy unit, you can turn out accurate, permanent copies at 1-a-minute speed—for *less than the price of a phone call!* No darkroom or technical knowledge needed. Anyone can operate APECO—"America's Most Widely Used Photocopy Equipment." Get full information, TODAY!

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Company.....
Title.....
Address.....
City & State.....

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NEW BINS

for assembling small parts

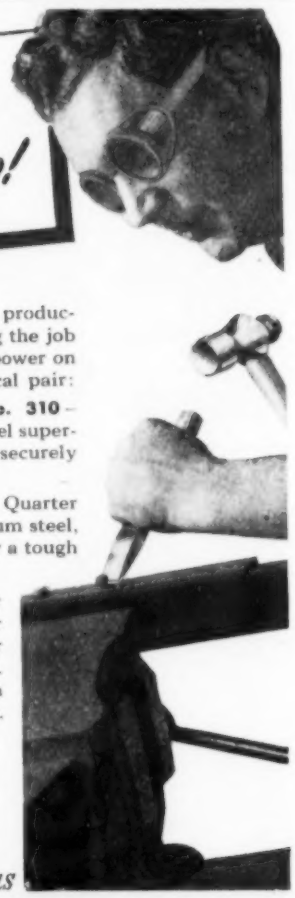
Floors slope to feed parts to front – end reaching and fumbling.
Bins taper toward front to form convenient semi-circle – keep all bins within easy reach.
Nesting, locking construction for rigid set-ups, easily changed when necessary.
All-welded construction. Rolled, smooth edges.
Hoppers available to increase capacity and cut time taken for refilling.
Two sizes – tapered or straight edges.

Manufactured and sold in Canada exclusively
by Walter H. Wickware, Ottawa
Write Stackbin Corporation, 1081 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

▲ Mention Item NED-915 when writing ▲

Good Tools Cut Costs, too!



STANLEY TOOLS – always production's favorite for hurrying along the job – regularly prove their earning power on cost sheets, too. Here is a typical pair:

Stanley Ball Pein Hammer No. 310 – Octagon pattern – high grade steel super-heat-treated – hickory handle securely wedged in head.

Stanley Cold Chisel No. 990 – Quarter octagon pattern–chrome vanadium steel, drop forged and oil hardened for a tough cutting edge.

Replace worn hand tools in your plant with new Stanley Tools for production efficiency. Order from your distributor. STANLEY TOOLS, 104 Elm St., New Britain, Connecticut.

THE TOOL BOX OF THE WORLD
STANLEY
Trade Mark
HARDWARE · HAND TOOLS · ELECTRIC TOOLS

▲ Mention Item NED-916 when writing ▲

SLY No. 4 TILTED BLAST MILL

• Used extensively to clean small castings, forgings, stampings, tools, etc., on a production basis. Handles non-ferrous castings—cores and all—saves core removal time. Effectively cleans heat treat scale from hardened steel parts without damage to sharp edges. Because of tilted barrel, it thoroughly mixes the load, exposes all surfaces to blast in shortest time. Automatic—requires but little attention.

Ask for Bulletin No. S-82.

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND 2, OHIO

▲ Mention Item NED-917 when writing ▲

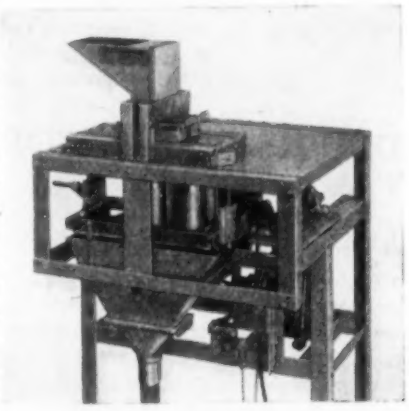
SURFACE GRINDER

Featuring manual controls, illustrated model GH surface grinder is especially applicable to operations requiring close tolerances. Grinder features smooth easy table action. Unit has deep V-ways between saddle and base and one flat and one V-way between table and saddle. Cartridge type direct drive spindle is included as standard equipment. This spindle has precision ball bearings throughout with automatic takeup for wear.

Castings used in grinder are of nickel alloy for long wearing quality. Grinder has one-piece base and column support construction. Precision elevating screw and cross feed screw operate through 4-inch bronze nuts to minimize wear. Hand wheel for spindle elevating screw is graduated in 0.0005-inch increments with vernier adjustment to 0.0001-inch. Hand wheel for cross feed is graduated in 0.001-inch increments. Working area of table is 6½ x 19¾ inches with maximum working height of 12 inches using standard 7 x ½ x 1¼-inch grinding wheel. Electromagnetic chucks, alternating and direct current rectifiers and demagnetizers, dust collectors and wheel dressing diamonds are available for use with machine. Made by DoALL Co., 254 N. Laurel Ave., Des Plaines, Ill.

▲ Mention Item NED-918 when writing ▲

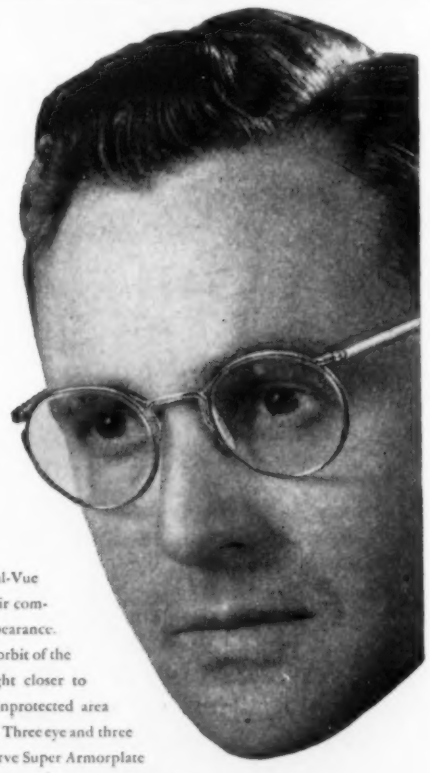
VOLUMETRIC FILLING MACHINE



Free flowing dry products can be packaged in the Rapp-Id-Filler volumetric filling machine at rate of from 80 to 120 units per minute. Containers ranging in size from few ounces to several pounds can be filled with rice, beans, peas, nutmeats, hard candies, grocery staples and similar products.

Machine employs telescoping type filling cups which have adjustable capacities from 22 to 33 cubic inches on smallest cup to 29 and 42 cubic inches on largest cup. Two models are available, CV-4 having four filling cups and CV-6 having six cups. Operation of models is identical. During operating cycle, two cups are filled. They then move over and empty while other two cups are being filled. This cycle is continuous. Slides are provided for cutting off flow of material into one or more cups. Cups can be emptied into common discharge hopper or into individual discharge hoppers depending on size of package and production desired. Made by Triangle Package Machinery Co., 917 N. Spaulding Ave., Chicago 51, Ill.

▲ Mention Item NED-919 when writing ▲



Ful-Vue
Safety Goggles
for Good Looking
Eye Protection

Workers like A-O Ful-Vue Safety Goggles for their comfort and good appearance. Shaped to conform to orbit of the eye, lenses are brought closer to the face, leaving no unprotected area around bridge of nose. Three eye and three bridge sizes, with 6-curve Super Armorplate Clear or Calobar lenses — with or without side shields.

Your nearest A-O Safety Representative can supply you.

American Optical Company — Safety Division
SOUTHBRIDGE, MASSACHUSETTS. OFFICES IN PRINCIPAL CITIES

▲ Mention Item NED-920 when writing ▲

WESTON Model 779

The new, compact super-sensitive

ANALYZER

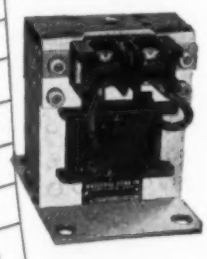
Extreme compactness and lightweight—dual DC voltage sensitivity of either 1000 or 20,000 ohms per volt—five AC and DC voltage ranges, seven DC current ranges, four DC resistance ranges and five decibel ranges, all carefully selected to meet the broadest requirements of testing and maintenance—precision WESTON resistors throughout—large 50 microampere WESTON meter—temperature compensated including AC ranges—size only 6⅜"x9⅛"x4⅞"—furnished in rugged, solid oak carrying case. Weston Electrical Instrument Corporation, 663 Frelinghuysen Avenue, Newark 5, New Jersey.

Weston *Instruments*

▲ Mention Item NED-921 when writing ▲

- ✓ Actuate Clutches
- ✓ Operate Switches
- ✓ Control Machines
- ✓ Print Identifying Symbols
- ✓ Operate Safety Devices
- ✓ Eject Work in Process
- ✓ Actuate Clamping
- ✓ Move Levers
- ✓ Operate Valves
- ✓ Vibrate Cutting Knives
- ✓ Open and Close Doors
- ✓ Hold Chucks
- ✓ Open and Close Hoppers
- ✓ Sort Inspected Parts

Namco "Stellite"—welded Solenoids are built in sizes with ratings from 2½ to 25 pounds, push or pull, at 1" stroke. Combination push-pull and other special applications are available. For alternating current only, constant or intermittent duty.



If you have jobs like these then you need SOLENOIDS

They're the modern, up-to-date way of doing jobs automatically—by remote control, and in cramped quarters if necessary.

With the positive, accurate action of Solenoids you can simplify design, manufacture and operation. They're taking the place of expensive, bulky gear trains, levers, linkages and other mechanisms. Many a manufacturer has come to us with a cost or space problem—and has found the solution in Namco Solenoids.

Namco Solenoids—with "Stellite"—welded contacts, are compact, rugged and reliable. They're *engineered* to the requirements of the job with the aid of an *expert*. That's where w can help you. We'll be glad to recommend the size and style best suited to your job—with standard or special terminal blocks and mountings. Like more details? Ask for bulletin EM-46.

ELECTRICAL MANUFACTURING DIVISION
THE NATIONAL ACME CO.
CLEVELAND, OHIO

▲ Mention Item NED-922 when writing ▲

★ *Weighs only 1¾ pounds!*
★ *Sensitive to 2% of scale!*
★ *New Design Features!*

$35.00

HUPPERT
PORTABLE PYROMETER

New in design, new in convenience, new in service—the Huppert Portable Pyrometer has departed from the conventional portable pyrometer specifications to fully meet the needs of today. This novel departure provides complete protection to face of instrument in all resting positions and perfect reading of the scale without neck stretching. Accuracy to 2% of scale. Duo range scale—0 to 500° and 0 to 1000° F., or 0 to 750° and 0 to 1500° F., or 0 to 1000° and 0 to 2000° F., or equivalent °C. Special ranges to order. Overall length of instrument, 11". Cast aluminum body sealed against dust and fumes. Durable handle. Rubber legs. Also available as surface type.

K. H. HUPPERT CO.
INSTRUMENT DIVISON
6838 Cottage Grove Ave., Chicago 37, Illinois

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Fasten machines and heavy fixtures to concrete, brick, tile, marble or stone with Paine Steel Anchors. Their large gripping area resists vibration and stress. They hold effectively in bottomless or exact depth holes and can be reused with same security by bending jaws back in position.

Ask your Supplier or Write for Catalog.

THE PAINE CO.
2977 Carroll Ave.
CHICAGO 12, ILL.
Offices in Principal Cities

★ PAINE ★
FASTENING and HANGING DEVICES

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Your DECISION

will be influenced by the accuracy, durability and consistant quality of our product. And, when dependable performance is the deciding factor—it's

"Thumbs up" for *Industrial*

—because "Industrial" gears have what it takes. We deliver the kind of gears, racks and sprockets you specify. Our shop is large—we are specialists—our tool equipment is 95% new. Each machinist in our plant is a craftsman who can set up his own machine. All work passes rigid inspection. You get the best there is!

Decide now to make "Industrial" your source of supply.

Write for catalog and handbook on your company letterhead.

INDUSTRIAL GEAR MFG. CO.
4541 VAN BUREN STREET CHICAGO 24, ILLINOIS

▲ Mention Item NED-925 when writing ▲

NONREUSABLE LABELS

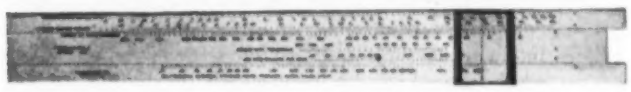
Designed for trade marks, underwriter's approval and similar factory applied data, self-destroying Kum-Kleen labels can be applied to metal, plastic, wood, varnish, glass or cellophane. Self-destroying feature is effected by die cutting label so that it can be removed only in segments and cannot be used again. Die marks are impressed in such manner that they are virtually invisible and in no way affect design on label.

Labels adhere without moisture to any smooth, clean surface, will not pop or curl despite intense heat, cold or humidity. Labels will peel off easily without leaving mark. Made by **Avery Adhesive Label Corp.**, 36 W. Union St., Pasadena 1, Calif.

▲ Mention Item NED-926 when writing ▲

PRODUCTION SLIDE RULE

Rapid calculation of an operator's daily production requirements and results can be computed on this Productirule. Unit will compute standard hours of work produced, productivity

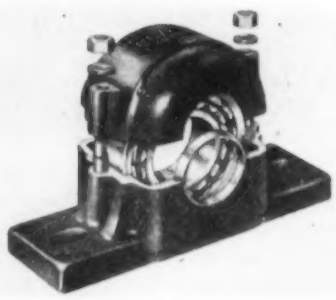


percentage, wage incentive earnings, day work and base rate earnings, production units required to break even with standard, production units required to earn any desired bonus and standard labor costs per 100 units.

Scales are of sufficient range to cover nearly all operations and can be applied where allowable standard times are expressed either in minutes per unit or hours per hundred units. Instructions illustrated by examples accompany each rule. Price of rule is $2. Made by **Productirule Co.**, Strawberry Hill, Irvington, N. Y.

▲ Mention Item NED-927 when writing ▲

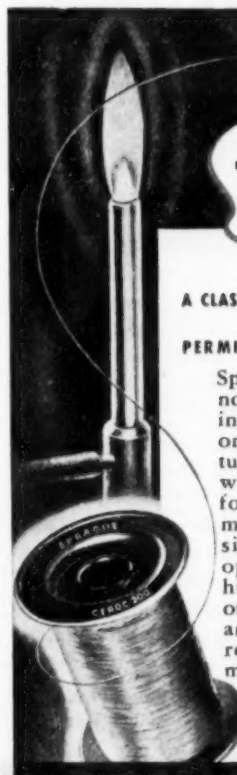
SPLIT PILLOW BLOCK



Quick and easy installation, removal or replacement of power transmission shafts without misalignment can be effected with Shafer split pillow blocks. Positive alignment dowel bolts assure alignment of cap, bearing and base. No separate dowels are needed. Base allows for two or four-bolt mounting. Large lubricant reservoir, served by single conveniently located filler hole and single drain hole, provides cool lubrication.

Blocks are equipped with series DE-22000 self-aligning bearings with two roller assemblies, one-piece outer race and spherical inner race. Units are universally adaptable to line shafting or machine installation in all industrial equipment and are readily interchangeable with all other makes of split pillow blocks. Made by **Shafer Bearing Corp.**, 1412 W. Washington St., Chicago 7, Ill.

▲ Mention Item NED-928 when writing ▲



THE WIRE INSULATION THAT WILL NOT BURN

A CLASS "C" INSULATION—INORGANIC-CERAMIC—
APPROXIMATELY ¼ MIL THICK
PERMITS CONTINUOUS OPERATION AT 200° C.

Sprague CEROC 200 is an inorganic, non-inflammable ceramic wire coating supplied in a preferred thickness of only ¼ mil and holding vast opportunities for smaller size and lighter weight with greatly increased power for a wide variety of electrical equipment. Midget windings can do man-size jobs—with safe, conservative operation up to 200°C. Space factor is higher than that of any other wire insulation and, CEROC 200 can readily be wound to meet most requirements.

MIDGET-SIZE WINDINGS DO MAN-SIZE JOBS!

Write for copy of CEROC 200 Bulletin 505

SPRAGUE ELECTRIC CO., NORTH ADAMS, MASS.

SPRAGUE *Ceroc200*
(*Trademark Reg. U. S. Patent Office)

Produced by the Makers of SPRAGUE CAPACITORS and *KOOLOHM RESISTORS

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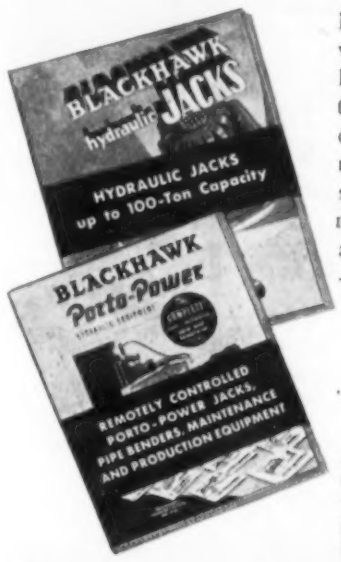
READY NOW!

BLACKHAWK POSTWAR HYDRAULIC EQUIPMENT CATALOGS



Here is complete postwar data on Blackhawk's Hydraulic Jacks and Porto-Power equipment, including new developments. These catalogs show how you can save money, speed production and maintenance work — create greater safety.

FREE

Ask your industrial supply distributor or write us and we will rush copies to you.

BLACKHAWK MFG. CO.,
Dept. J1427, Milwaukee 1, Wis.

BLACKHAWK

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Read why

INDUSTRY'S LEADERS CHOOSE PHILLIPS SCREWS

INDEPENDENT STUDIES! AUTHENTIC! UNBIASED! Prepared by investigators from the James O. Peck Co., industrial research authorities, who talked with key men in top U. S. plants using Phillips Recessed Head Screws in product assembly.

"Assembly savings 50%"... "Breakage reduced 90%"... "Eliminate $40.-a-day spoilage." In their own words, America's best assembly men tell how they apply the proved advantages of Phillips Screws to speed driving, end driver skids, eliminate unsightly burrs, improve product appearance.

These reports have been offered as they were published throughout the year. If you haven't already sent for them, get all 12 now. Read them... learn why more and more, Phillips Screws spot the profit-planned product!

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Phillips Screw Mfrs., c/o Horton-Noyes
2300 Industrial Trust Bldg., Providence, R. I.

Send me reports on Assembly Savings with Phillips Screws.

Name .....
Company .....
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GUARDIAN Standard Type Relays

Solve many "SPECIAL" control problems...

How Multiple Variations of Guardian Basic Design Relays May Transform a Standard unit into the Special You Need.

The Guardian Basic-type relays shown are but a few of the many standard Guardian units which offer a wide range of variations. You get the standard advantages of quicker delivery, lower cost, consistent performance. For example, Guardian's Stepping Relay is available in three basic types: continuous rotation; add and subtract; electrical reset with numerous variations. Series 500 is small, lightweight, offers many contact combinations, has replaceable coil. Series 595 is tiny. Switch capacity up to 10 PDT, 1.5 amp. contacts. Weighs approx. 2 Oz.

SERIES R STEPPER

SERIES 500 RELAY

SERIES 595 RELAY

SEND FOR THIS NEW GUARDIAN CATALOG

Your Copy is Waiting— No Cost, Write

GUARDIAN ELECTRIC

1626-B W. WALNUT STREET CHICAGO 12, ILLINOIS

A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

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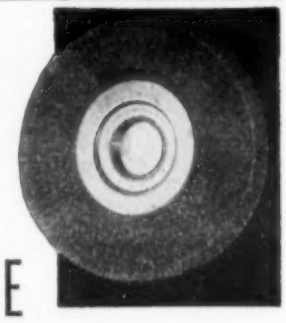
For Super Fast Cleaning and Finishing . . .



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L-O-N-G L-I-F-E

AND ECONOMY

Thor WIRE WHEEL BRUSHES

IMMEDIATE DELIVERY FROM DISTRIBUTORS STOCKS

Made in sizes from 4" to 12" diameter with wire from 30 to 36 gauge, Thor brushes are available in all standard types for use on equipment with spindle speeds up to 6000 r.p.m. Write today for new Thor folder No. 538.

INDEPENDENT PNEUMATIC TOOL COMPANY
600 W. Jackson Boulevard, Chicago 6, Illinois

Thor PORTABLE POWER TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS

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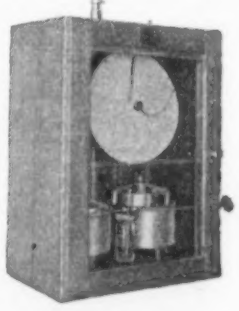
The World Over —wherever there is gas



ARCCO-ANUBIS GAS GRAVITOMETERS

• Once calibrated and properly installed the Arcco-Anubis Gas Gravitometer requires no further attention. Hundreds are in use in pipelines and refineries of major companies. • This precision specific gravity instrument is constructed without electric motors, pressure regulating valves or other complex arrangements. The instrument is practically frictionless and the gas flows through it continuously, thus minute changes in specific gravity are recorded at once as they occur. As shown through years of use, Arcco-Anubis Gas Gravitometers remain accurate and highly responsive even under severe conditions of service.

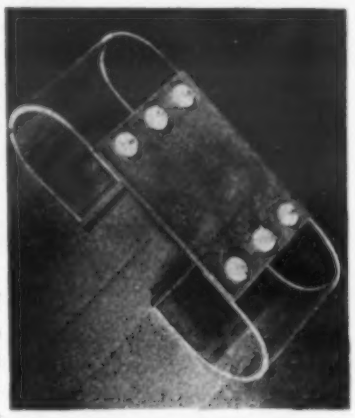
Send for Bulletin No. 101

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

▲ Mention Item NED-934 when writing ▲

PLASTIC RIVETS



Usable for fastening of light metals, leather, cardboard, rubber, upholstery and plastic material, these plastic rivets are made of Plexiglas transparent acrylic plastic and can be clinched without shock. Both solid and hollow shank rivets are available. Heat expansion method of insertion allows rivets to be used as blind fasteners where only one side of assembly is accessible. Because rivets will not rust or corrode, they are recommended for use in radio or high frequency apparatus or in food containers where metal cannot be used.

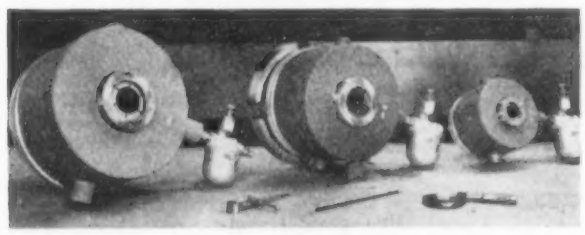
When used on fragile materials, rivets are heated and expanded with air pressure of spring loaded mechanism. After forming bond, exposed parts of rivet can be turned into decorative effect by further heat application to expand plastic into variety of shapes and forms. Rivets are available in wide variety of colors ranging from light tints to deep tones, thus permitting manufacturers to match product colors.

Two models of combined air and heater guns are available for applying rivets in bonding process. One type has completely automatic features and provisions for magazine loading device while second model is manually operated requiring individual insertion of rivets which are heated and expanded within machine. Plastic rivets made by **Douglas Aircraft Co.**, Santa Monica, Calif.

▲ Mention Item NED-935 when writing ▲

AIR OPERATED CHUCKS

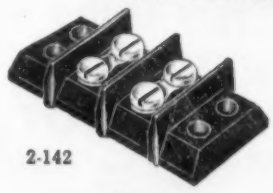
Two larger sizes have been added to standard line of precision air operated chucks. No. 501AT chuck is available in 1/32-inch diameter increments in 1⅝ to 1, 31/32 to ½ and 15/32 to



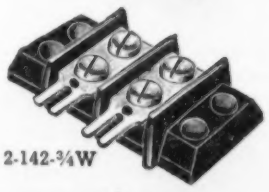
¼-inch sizes and in ⅛-inch steps in 1⅜ to ¾-inch hexagon size. Model No. 601-AT is available in 1/32-inch diameter increments in 2⅛ to 1½, 1 15/32 to 1 and 31/32 to 11/16-inch sizes as well as in ⅛-inch steps in 1⅞ to 1⅜-inch size for hexagon stock. Chucks feature collapsibility range of 1/32-inch, replacing seven standard single-purpose collets. Uniform, vise-like grip along entire length of collet permits holding glass, gold and ceramic tubing, and ferrous and nonferrous metals for second operations. Minimum breakage of tools and parts on drilling, buffing, polishing, honing and other operations is claimed. Other features include increased feeds and speeds, reduced set-up time and reduction of rejected parts. Made by Erickson Tools Div., **Erickson Steel Co.**, 2309 Hamilton Ave., Cleveland 14, O.

▲ Mention Item NED-936 when writing ▲

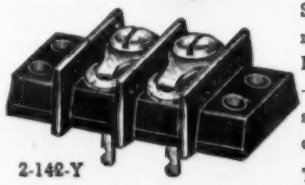
JONES BARRIER TERMINAL STRIPS



2-142



2-142-¾W



2-142-Y

Bakelite Barriers placed between Terminals increase the leakage path and prevent direct shorts from frayed wires at Terminals. Terminals and screws are of nickel plated brass. Insulation is of BM 120 molded Bakelite. Illustrated are three types: Screw Terminals, Screw and Solder Terminals and Screw Terminal above Panel with solder Terminal below. Every type of connection.

Six series cover every requirement: No. 140—5-40 screws, No. 141—6-32 screws, No. 142—8-32 screws, No. 150—10-32 screws, No. 151—12-32 screws and No. 152—¼-28 screws.

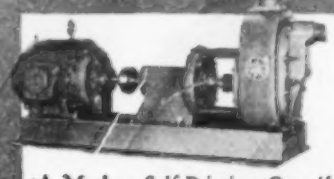
These sturdy Terminal Strips will not only improve your electrical connections but will add considerably to the appearance of your equipment.

Write today for catalog No. 14 listing our complete line of Barrier Strips in addition to other Electrical Connecting Devices.

HOWARD B. JONES DIVISION
CINCH MFG. CORP.
2460 W. GEORGE ST. CHICAGO 18

▲ Mention Item NED-937 when writing ▲

It's what is NOT inside that makes a MARLOW PUMP more efficient!



A Marlow Self-Priming Centrifugal Pump has no ports, by-passes or other auxiliary priming devices that reduce pumping efficiency. Priming is positive and automatic even on high suction lifts.

With the exclusive Marlow diffuser method of self-priming there is no recirculation or wasted motion. A Marlow has no parts which require adjustment or manipulation. Practically no operating attention is needed.

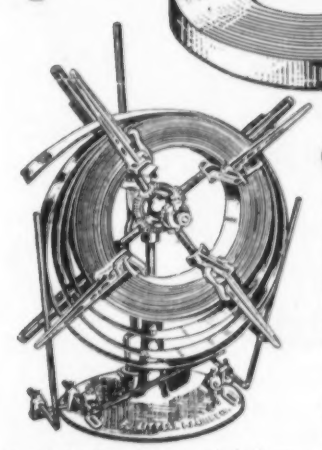
- Pumps wide variety of liquids; clear, gritty, heavy, volatile.
- Reliable for continuous or intermittent service; primes itself whenever necessary.
- Strong, long-life construction that helps assure dependable, trouble-free performance.
- 1½ to 10-inch sizes. 25 to 3500 gallons per minute.

Send for interesting literature. Marlow Pumps, 590 Greenwood Avenue, Ridgewood, N. J.

MARLOW PUMPS
Manufacturers of Quality Pumps Since 1924

▲ Mention Item NED-938 when writing ▲

TOPS ON SPEED



Littell Reels center and balance coil stock. Ball bearings. Adjustable brake and bars. With loading lever, one man can load coils up to 300 lbs.

IN HANDLING COIL STOCK

AUTOMATIC centering and balancing of coil stock is done with speed, ease and saving of material with LITTELL Automatic Centering Reels. Plain and motor-driven types. Capacities, 100 to 6,000 lbs. Coil Cradles for coils up to 20,000 lbs.

Other Littell press-room equipment includes: Roll and Dial Feeds, Power Straighteners Scrap Winders, Air-Blast Valves, Vacuum and Mechanical Pickers.

F. J. LITTELL MACHINE CO.
4161 Ravenswood Ave.
Chicago 13 Ill.

REQUEST BULLETINS

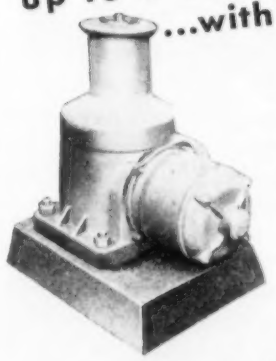
SPEED WITH SAFETY

LITTELL REELS

▲ Mention Item NED-939 when writing ▲

HOW 1-MAN CAN MOVE

up to 6 LOADED CARS ...with an S-A CAR PULLER!



An S-A CAR PULLER does the work of a switch engine in shifting and spotting loaded or empty cars. One man can move cars easily with a pulling rope snubbed around this powerful electric capstan.

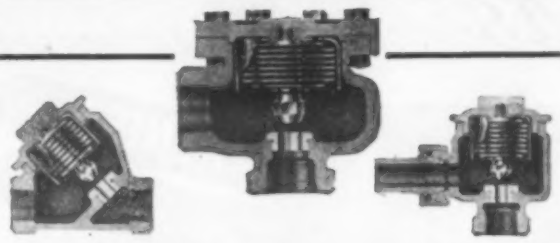
Ask for Data Book 1339 and prices on Car Pullers, Car Puller Rope, Hooks and Sheaves.

STEPHEN S-ADAMSON MFG. CO.

Tellevel-Bin Level Controls · Car Loaders · Car Pullers · Saco Speed Reducers · Winches · SealMaster Ball Bearings

12 RIDGEWAY AVE., AURORA, ILLINOIS

▲ Mention Item NED-940 when writing ▲



Put a Nicholson Trap on a Test Line

Here's what you'll find

Whether your test line is devoted to maintenance or specification problems, some of the interesting findings you'll make concerning Nicholson thermostatic steam traps follow.

1. **BIG DISCHARGE,** 2 to 6 times average traps.
2. **NO AIR BINDING.** Discharge both air and water.
3. **NO FREEZE-UPS.** Drain completely when cold.
4. **NO DRIBBLING.** Close tight when steam is in trap.
5. **NO ADJUSTMENT** needed for varying pressures.
6. **NO WATER-LOGGING.**

5 types, for every process and power purpose; sizes ¼" to 2". Pressures to 225 lbs. Bulletin 544 or see Sweet's.

W. H. NICHOLSON & CO. 162 OREGON ST. WILKES-BARRE, PA

▲ Mention Item NED-941 when writing ▲

CLEVELAND *Top Quality* Set Screws

CLEVELAND Set Screws meet your most rigid requirements. They're made to close tolerances, carefully case hardened. Wide range of styles and sizes in square head and headless. Write for samples and prices.

CLEVELAND *Top Quality* **FASTENERS** — **THE CLEVELAND CAP SCREW COMPANY**
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouses: Chicago and Philadelphia
Ask your Jobber for Cleveland Fasteners

▲ Mention Item NED-942 when writing ▲

CHERRY BLIND RIVETING

Speed **unequalled by any other fastening technique.**

Security **equalled only by conventional riveting.**

Speed—No hammering or bucking. Installation of a Cherry Blind Rivet is a simple one-hand operation in which the rivet is installed with a *controlled pull* from one side of the work only.

Tight, Strong Joints because of dynamic expansion of rivet shank during installation (greater shank expansion than any other blind fastener). Powerful controlled pull of rivet gun draws stem into rivet shank, *forcibly expanding* rivet to fill hole *tightly*. Strength and vibration-resistance comparable to conventional rivets. Don't work loose like nuts and screws.

CHERRY RIVETS, THEIR MANUFACTURE & APPLICATION ARE COVERED BY U. S. PATENTS ISSUED & PENDING

Cherry Rivet *Company* LOS ANGELES 13, CALIFORNIA

Get this illustrated manual. Write Dept. B-113, Cherry Rivet Co., 231 Winston St., Los Angeles 13, Cal.

▲ Mention Item NED-943 when writing ▲

MOTORIZED HAND TRUCK

Employing either electric lift or foot lift, 1947 models of motorized hand truck operate from standard 11-plate storage batteries. In electric lift model, electric lift pump and motor use minimum of current, said to be less than 10 per cent of battery capacity in normal day's operation. Batteries and chargers of Transporters, Transtractor push-pull unit and Transtacker high-lift stacking unit are interchangeable.

Controls include forward and reverse, speed, lift, steering and brake and are so arranged that they can be manipulated by one hand and operated simultaneously. Time required to lift and move average load to maximum height is less than 5 seconds. Lift components are adequately protected from damage but are readily accessible for maintenance.

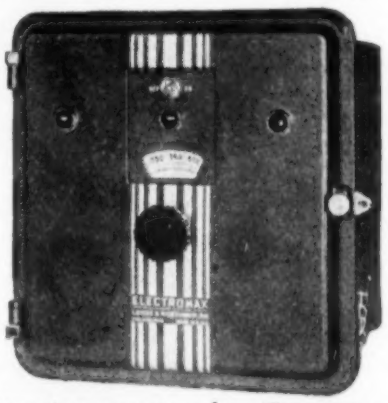
Both electric lift and foot lift types have double position brake which can be applied by either raising or lowering guide handle. Combination of brake and one-hand controls with electric lift enables operator to guide Transporter into skid or pallet, brake truck, lift load and reverse direction in single motion without stopping.

Both electric and foot lift types are available having 4000 and 6000-pound load capacities in platform models and 4000-pound capacity in pallet model. Made by **Automatic Transportation Co.,** 149 W. 87th St., Chicago 20, Ill.

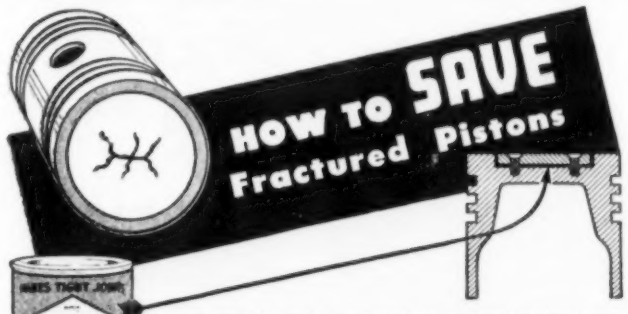
▲ Mention Item NED-944 when writing ▲

TEMPERATURE CONTROLLER

Developed for temperature control of ovens, stills, baths, presses and coolants where indicating and recording features are not required, Electromax temperature controller is low priced unit which signals and controls only. Temperature readings can be taken manually with it at any time. Instrument employs Wheatstone bridge circuit with vacuum tube amplifier and detector. Tubes are standard types which require no matching or balancing. Unit is operated from standard alternating current outlet. Temperature sensitive elements used are Thermohm resistance thermometer bulbs. Length of lead wires does not affect calibration of instrument and location of Thermohms can be changed as desired. Standard ranges are 0 to 250 F and 0 to 1000 F or corresponding ranges of 0 to 150 C and 0 to 550 C. Made by **Leeds & Northrup Co.,** 4934 Stenton Ave., Philadelphia 44, Pa.



▲ Mention Item NED-945 when writing ▲



A radial crack developed in a Diesel piston head. This simple, inexpensive repair put the piston back in service.

Enough metal was removed to hold a carefully fitted metal plug. See diagram. This plug and the recess were thoroughly coated with Smooth-On No. 3 Iron Cement. Flat-head screws, also seated with Smooth-On No. 3, secured the plug in place. The cement, when set, became as hard as the piston metal, sealing the crack and gripping the plug tightly.

Smooth-On No. 3 comes in paste form, ready to use. Makes tight threaded or flanged joints. Seals rivets and seams. Withstands high temperatures and pressures, water, steam, gas, air. Order it in 1-, 5- or 25-lb. size from your supply house. If they haven't it, write us.

FREE Repair Handbook

Clear directions for many practical, tested repairs on plant and shop equipment. 40 pages. 170 diagrams. Pocket size. Mail a postcard for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 10B
570 Communipaw Ave., Jersey City 4, N. J.

Do it with **SMOOTH-ON** IRON CEMENT

▲ Mention Item NED-946 when writing ▲

Lifts Costs LOWER

This is Type F½, a speedy, low-headroom, welded-steel-frame hoist for loads up to one ton. Simple, sturdy construction includes a fully enclosed, splash-lubricated, alloy-steel gear train, and oversize automatic load brake. Quality-built throughout in all mounting types for long life. Send for Bulletin No. 800NED.

(For loads up to 10,000 lbs., ask for Bulletin No. 801NED)

R & M Electric Hoists make light of muscle-tiring tasks; keep everything orderly and on the move for volume at a profit. In the hundreds of durable, dependable models there is one exactly right for every job. Send for literature. Representatives in 25 cities are at your service.

ROBBINS & MYERS, INC.
HOIST & CRANE DIVISION, SPRINGFIELD, OHIO

▲ Mention Item NED-947 when writing ▲

NEW

Another BRYANT Postwar Development

Universal DIAMETER GAGE

The New Bryant Universal Diameter Gage offers faster, simpler and highly accurate inspection of internal or external plain diameters from ⅜ inches to 4 inches—in fact, operation is so simple that after the gage has been set to a master ring, the operator has merely to place a part on the contacts and check accuracy to the nearest .00002 inch on the dial indicator.

Functional design and sound construction result in many labor saving features and assure long lived accuracy in the new gage. The serrated steel work table is adjustable to accommodate parts up to 1½ inches in depth. Diameter measurement is accomplished with three precision-ground, hardened-steel contact points. Two are movable and travel in unison to facilitate setting for different diameters. The third is a stationary sensitive contact which may be operated by a finger-tip control lever when necessary. The points are designed to contact the work at 90 degrees and automatically center it regardless of diameter. To further insure accurate readings, a vibrator actuates the movable mechanism and the dial indicator to disclose very minute variations in the part being checked—this eliminates "feel" for fit.

The new Bryant Universal Diameter Gage simplifies and speeds inspection of varying sized plain diameters—cuts quality control costs to a new low—it will pay you to write for complete details.

Also Bench Model Thread Gages, Adjustable Thread Gages, Squareness of Face Gages and Portable Thread Gages.

Please send me Catalog No. G3 which gives complete details on the Bryant Thread Gages.

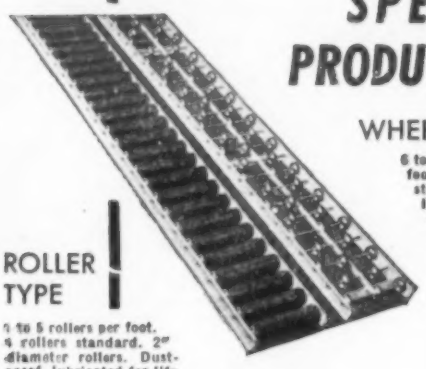
Name_____ Title_____
Company_____
Street_____
City_____ State_____

BRYANT CHUCKING GRINDER CO.
SPRINGFIELD, VERMONT, U. S. A.

BRYANT

▲ Mention Item NED-948 when writing ▲

GRAVITY CONVEYORS SPEED PRODUCTION



WHEEL TYPE

6 to 16 wheels per foot. 10 wheels standard. Odd lengths and different wheel alignments available.

ROLLER TYPE

4 to 5 rollers per foot. 4 rollers standard. 2" diameter rollers. Dust-proof, lubricated for life, ball bearings.

METZGAR "POWER HELPER"

Portable Power Conveyor and Loader. Model 680—6' Basic unit—available up to and including 10' lengths—8" belt. Model 812—8' Basic unit—available up to and including 12' lengths—12" belt. Plug in electric power.

Sections—5', 10'; Standard widths—Wheel Type 11½", Roller Type 11½" and 16". Two or more sections may be bolted together for greater widths. We bore the holes and supply bolts and nuts at no additional cost. Curves—5', 8', 12'; 45° or 90°.

WRITE FOR DESCRIPTIVE FOLDER

METZGAR CO., 414-16 Douglas N. W.
Grand Rapids 4, Michigan

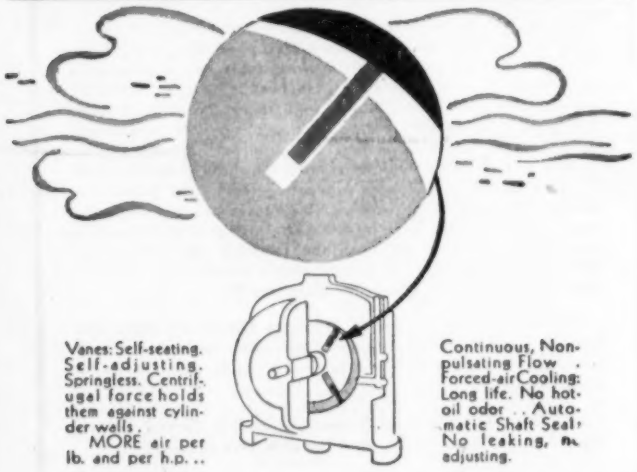
▲ Mention Item NED-952 when writing ▲

THE MOST PRODUCTIVE OF ALL ELECTRIC TRUCKS are equipped with

Electric trucks equipped with Ready-Power Units are industry's most effective materials-handling combination. Because Ready-Power generates a continuous supply of dependable, live power right on the truck chassis, it permits *full speed* electric operation for an *unlimited number of hours*. Users report as much as 25% to 50% more tonnage handled with lower net costs. Ready-Power Units can be installed on any truck. Convert your present trucks to Ready-Power. Specify Ready-Power on new truck purchases.

THE READY-POWER CO.
3832 Grand River Ave., • Detroit 8, Mich.

▲ Mention Item NED-953 when writing ▲



WHAT—NO "FEATURES?"

The Gast is so free of "features" and complexities that it practically "works without works." It consists, simply, of a slotted rotor, with one-piece vanes, which sweep the cylinder walls, and seat and take-up themselves, because centrifugal force won't let them do otherwise. That's why Gasts give MORE per h.p. and MORE years of care-free service on more and more machines . . TRY A GAST! Write. Describe your present or possible use of air on machines you make. We will send a Gast for on-the-job proof that Gast will positively do the work better . . GAST MFG. CORP. 115 Hinkley St., Benton Harbor, Michigan.

GAST ROTARY

VACUUM PUMPS (to 28 in.) • AIR COMPRESSORS (to 30 lb.) • AIR MOTORS (to 1 h.p.)

▲ Mention Item NED-954 when writing ▲

CARBON MONOXIDE ALARM

Operating continuously and providing both visible and audible signals, this carbon monoxide alarm guards against dangerous concentrations of carbon monoxide in air near blast furnaces, in steel mills, chemical plants, public garages and other locations. Predetermined settings can be made for concentrations as low as 0.02-per cent (2 parts per 10,000), a concentration at which a few hours exposure would be required to produce first symptoms of poisoning.

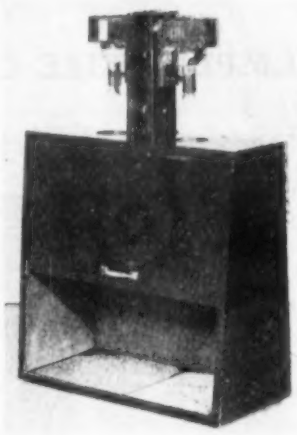
Alarm unit draws continuous sample of surrounding air and forces it over catalyst which oxidizes all carbon monoxide to carbon dioxide. Heat of reaction is measured by thermocouples and indicated on contacting meter dial in terms of concentration. When concentration of carbon monoxide reaches predetermined meter setting, alarm horn sounds and red light jewel is illuminated. Both signals continue to operate until instrument is reset manually.

Instrument is self-contained in weatherproof case and requires only connection to 110-volt current source. Made by Mine Safety Appliances Co., 220 N. Braddock Ave., Pittsburgh 8, Pa.

▲ Mention Item NED-955 when writing ▲

FINISH INSPECTION UNIT

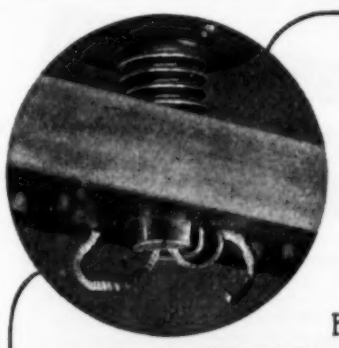
Machined finishes are controlled easily with this model D-30 portable Faxfilm projection unit. Instrument provides quick accurate comparison of production finish with standard finish and can be used on curved and conical shapes and inside or outside diameters as well as on flat surfaces.



In operation, plastic replica of surface is made in less than a minute and projected in microfilm projector to produce three-dimensional image of surface at from 10 to 200-diameter magnification. Two microfilm projectors mounted at top of case can produce images of standard finish and of production finish side by side at 30-diameter magnification for comparison. Wollensak 1-inch f:2.46 lenses provide definition of minute surface irregularities to show differences between surfaces. Rheostats for each projector equalize intensity of their light for accuracy in comparison.

Higher magnification is obtained by turning projectors so that they project horizontally on wall or screen. Entire inspection unit operates on 110-120 volt alternating or direct current. Overall weight is 27 pounds and space required is only 2 square feet. Made by Faxfilm Co., Room 556, 1220 W. Sixth St., Cleveland 13, O.

▲ Mention Item NED-956 when writing ▲



HOLTITE TAP SCREW

Eliminates Tapping! Fastens Any Material Better—At Less Cost!

Actually TAPS *its own threads*

Save tapping time and cost — tap and fasten in ONE operation with this new economy "TAP" screw that actually cuts its own perfect mating threads in any material. The slot in point, corresponding to flutes of a tap, provides two balanced cutting edges and chip reservoir which cut perfect mating threads for stronger vibration-resisting fastenings with easy chip clearance. Specify "TAP" screws and save!

U. S. Pat. No. 2,292,195. Other Patents Pending.

CONTINENTAL SCREW CO. New Bedford, Mass., U.S.A.

▲ Mention Item NED-957 when writing ▲

A Scientific Measurement of STIFFNESS *or* Resilience *of*

Thin Metallic Sheet, Wire, Plastic Sheet, Paper and Paper Board, and other Flexible Materials

WITH THE

TABER STIFFNESS GAUGE

FREE. This illustrated brochure on stiffness and resilience testing. (Also handbook on wear resistance measurement with the Taber Abraser.)

The Taber V-5 Stiffness Gauge not only gives a precise measurement of stiffness, but also provides a method for testing resilient qualities of materials.

Its simplicity of operation and direct recordings make it an exceptionally practical instrument for industrial research. Light weight, portable. Motor driven (115 volts).

TABER INSTRUMENT CORP.
111N. Goundry St., N. Tonawanda, N. Y.

TABER V-5 STIFFNESS GAUGE

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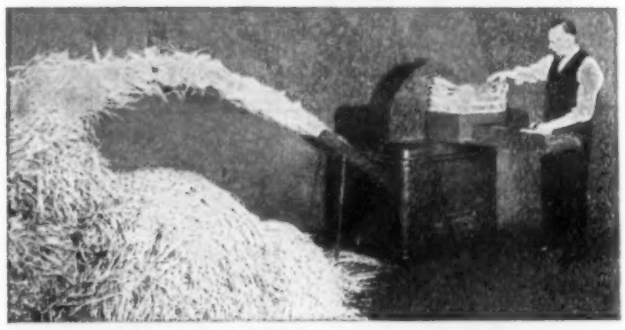
Don't BURN Paper CONVERT IT!



AIRFLUFF PAPER SHREDDER MAKES EXCELSIOR OUT OF CONFIDENTIAL PAPERS, BLUEPRINTS OR ANY WASTE PAPER

Here's the machine that destroys paper yet saves it! The AIRFLUFF Paper Excelsior Shredder, easily shreds, separates and fluffs old newspapers, confidential papers, blueprints, magazines, waste paper, corrugated cartons, tissue, Cellophane and waxed paper. Low price, simple to install. Power and maintenance cost less than 2c per 100-pound bale. Absolutely safe—present employees can easily operate. Cuts in widths from ⅛" to ⅜" Model No. 14 shreds 600 to 1800 lbs. per hour. Model No. 10 shreds 200 to 800 lbs. per hour. Write today for prices and complete facts about these remarkably simple, sturdy and efficient new AIR-FLUFF Paper Shredders.

See our insert and listing in Thomas Register.

MITTS & MERRILL • SAGINAW, MICH.
1000 SOUTH WATER STREET
BUILDERS OF MACHINERY SINCE 1854

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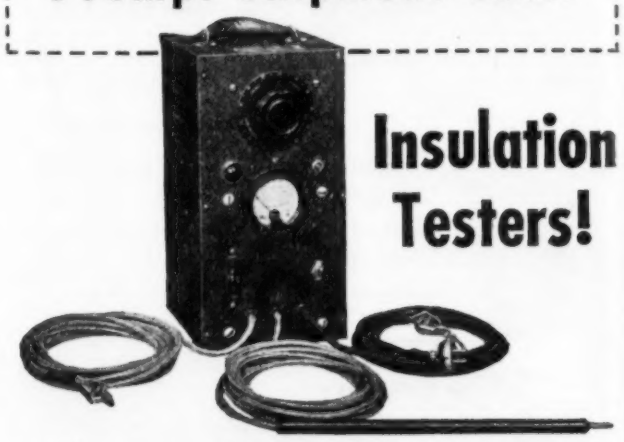
Prompt Shipment on...



Insulation Testers!

. . . You can get this portable 2500-volt, 0.75 kva capacity portable insulation tester *promptly from stock*. It not only gives you quick, accurate insulation tests, but is a handy device to have for rapid testing of all types of electric apparatus and parts. Size 15 in. x 7 3-4 in. x 8 3-8 in. weighs only 47 lbs. Includes two 15 ft shielded high-voltage leads and 15 ft of cord for plugging into 115 v 60 cy supply. OTHER PORTABLE A-C TESTING EQUIPMENTS NOW AVAILABLE "OFF THE SHELF"! Write for Bulletin GEA-4477, *Apparatus Dept., Sec. 401-75, General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC
401-75-5155

▲ Mention Item NED-960 when writing ▲

HANDLE HEAVY LOADS

Easily

WITH LOW COST

RUGER Hydraulic Floor Crane

NO other like it . . . combines advantages of smooth hydraulic power and sturdy cantilever boom. Lifts, lowers, travels with load wherever you can push a floor truck. Gets into tight places inaccessible to other equipment.

Safe . . . load always under positive control. Simple . . . only two operating controls, pump lever and release valve . . . anyone can use a Ruger.

Three sizes . . . 1-ton, 2-ton, 3-ton. Write to nearest address below.

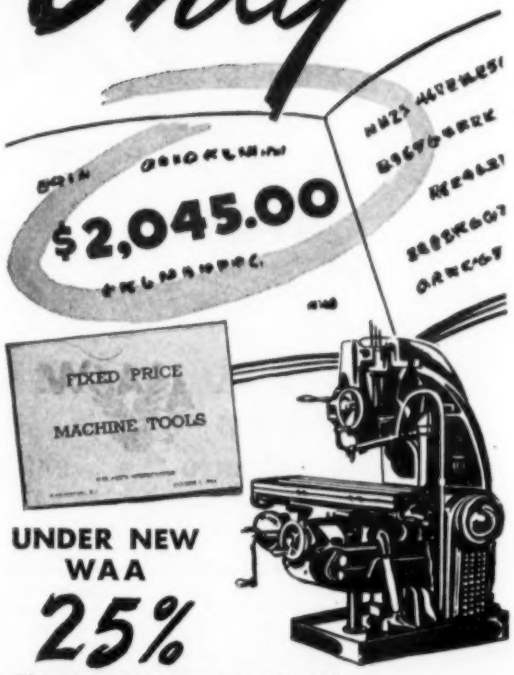
RUGER *Equipment Co., Inc.*

Load Lifting and Handling Devices

408 Leader Bldg. Cleveland 14, Ohio — P. O. Box 3821 Portland 8, Ore.

▲ Mention Item NED-961 when writing ▲

Only



UNDER NEW WAA

25%

"BELOW-MARKET" PRICE SCHEDULE

Here is a real bargain in surplus machine tools for general production purposes. 31 major types of tools—in all makes and models have been recently repriced to an average of 25% *under* the open market for the same machines—in order to clean government warehouses faster of this surplus property. The tools average less than 3 years old. Few need rebuilding but when necessary it can be done at a cost within the large price differential allowed. Find out today about these bargains for yourself or your company. Write, wire or phone any of the WAA offices listed below for your copy of the fixed price Machine Tool Catalog—issued October 1, 1946 . . . or ask your regular machine tool dealer to show you his copy.

686-2-A

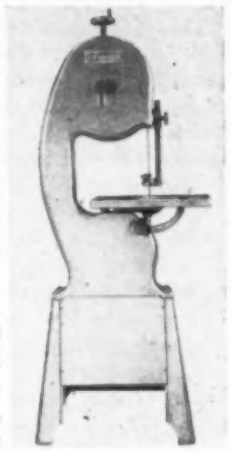
WAR ASSETS ADMINISTRATION

GOVERNMENT OWNED SURPLUS

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis • Nashville • New Orleans • New York • Omaha • Philadelphia • Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Tulsa

▲ Mention Item NED-962 when writing ▲

BAND SAW

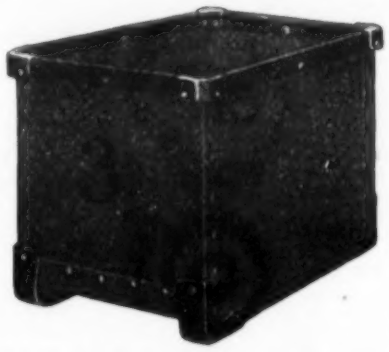


Originally designed for work on wood and plastics, model 140 heavy duty general purpose band saw also can be used for metals. Frame and guard are one-piece casting. Vertical cutting clearance is 10 inches and horizontal clearance is 13¾ inches. Wheels are balanced and ball bearing mounted. Blade is installed at back of saw unit to assure maximum operator protection.

Tilting table is made of cast iron. It measures 17 inches long and 20 inches wide. Saw is powered by ½ or ¾-horsepower motor and is available with or without cast iron base. Made by **Livingston Mfg. Co.**, South Gate, Calif.

▲ Mention Item NED-963 when writing ▲

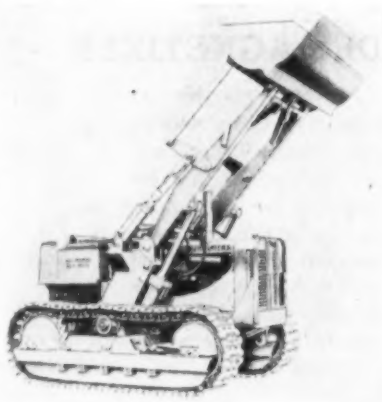
FIBER TOTE BOX



Reinforced at all wear points, this heavy duty fiber tote box is equipped to withstand hard continual use in industrial plants. Boxes are available in wide range of sizes and can be applied to various jobs such as receiving output of automatic machines, carrying parts from department to department throughout plant and for storing parts and products. Made by **William Bal Corp.**, Johnson St., Newark 2, N. J.

▲ Mention Item NED-964 when writing ▲

TRACTOR SHOVEL



Designed for use on Allis-Chalmers model HD-5 long track, rigid truck frame diesel tractor, this No. TS-5 Tracto-Shovel has hydraulically controlled bucket operated by double acting lift and dumping cylinders. Cylinders provide adequate down pressure and controlled closing and dumping of bucket. Bucket can be dumped or closed at any height.

Tractor width buckets of 1 cubic yard capacity are standard equipment. Bulldozer blades or special buckets are optional. Shovel frames are mounted directly to tractor and contain 25-gallon capacity oil reservoir. Overall length of unit is 14 feet 6 inches, width is 6 feet 3½ inches and height with bucket down is 5 feet 11⅝ inches. Made by **Tractomotive Corp.**, Findlay, O.

▲ Mention Item NED-965 when writing ▲

Lifts 25 Tons a Full 10¼ Inches with Great Ease!

There are so many heavy lifting and moving jobs for which the Simplex Standard Speed Ball Bearing Industrial Jack is "tops" for ease, speed and safety. No. 2522 lifts its full rated capacity on the cap or the broad toe lift (10 sq. in.). Affords greater clearance above ground for easier operation because the enclosed ratchet mechanism is at the top of the Jack, instead of in the base as in journal Jacks. Send for Catalog 45.

Simplex No. 2522 Jack. Capacity 25 tons; height 22"; lift 10¼"; toe lift minimum 4⅜"; weight 140 lbs.

SIMPLEX WORLD'S MOST COMPLETE LINE OF JACKS
LEVER ✓
SCREW ✓
HYDRAULIC ✓

Templeton, Kenly & Co., Chicago (44), Ill.

Better, Safer Jacks Since 1899

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WANT AIR TO REACH EVERY NOOK AND CRANNY?

THEN INSTALL *TUCK-AWAY HOSE REELS NOW

1844 1946

Why have airlines straggling all through your shop. You can quickly install *Tuck-Away hose reels under benches, along walls, on ceilings etc. Keeps air hose off the floor, out of sight but at your fingertips. Reels up just like a window shade.

Free a new folder. Write for Bulletin A98-D today.

*T. M. Reg. U. S. Pat. Off.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Inc.

Brooklyn 17, New York

Schrader PRODUCTS CONTROL THE AIR

▲ Mention Item NED-967 when writing ▲

DO IT *Faster and Better with* **ARO** PNEUMATIC TOOLS

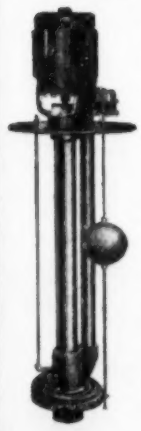
Write for complete catalog showing tools for drilling, screw-driving, nut-setting, sanding, grinding, polishing and other production jobs. The Aro Equipment Corp., Bryan, Ohio.

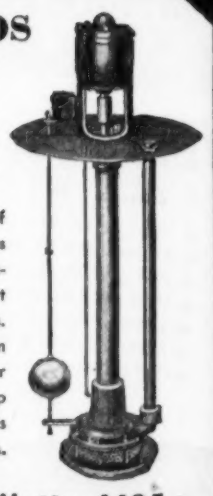
THERE'S AN ARO JOBBER NEAR YOU

▲ Mention Item NED-968 when writing ▲

Sump Pumps

Deming Vertical Sump Pumps are designed for sump drainage, pumping heavy viscous liquids from pits, handling screened sewage, and for numerous other pumping services.





Two of various types of Deming Sump Pumps are illustrated. The complete line meets most wet or dry pit requirements. Capacities range from 10 to 3200 gallons per minute with heads up to 120 feet and speeds from 860 to 1750 r.p.m.

Write for Bulletin 4605

This 16-page, 8½x11, illustrated catalog includes specifications and performance tables on the complete line of Deming Sump Pumps.

THE DEMING COMPANY
244 BROADWAY AVENUE • SALEM, OHIO

DEMING THE COMPLETE LINE PUMPS AND WATER SYSTEMS

▲ Mention Item NED-969 when writing ▲

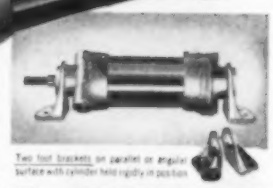
Modernair CUSHION TYPE Air Cylinders

WITH INTERCHANGEABLE MOUNTING BRACKETS

AVAILABLE FROM STOCK

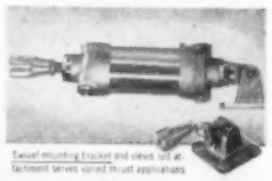
IN 5 DIAMETERS

Modernair cushion type cylinders serve many and varied actuating needs in the application of "Controlled Air Power." Compact . . . positive cushioned action . . . diversified mountings . . swivel heads for simplified installations . . "O" ring packing . . rugged construction . . ease and low cost of servicing



Two foot brackets on parallel or angular surface with cylinder held rigidly in position

End plate permits mounting on flat surface with cylinder held rigidly in position



Swivel mounting bracket and clevis roll attachment serves varied thrust applications

CV SERIES — 4 WAY VALVES . . . hand, foot or pilot operated . . . fully balanced . . . ¾" and ⅝" sizes.

AUTO - FILTER - LUBRICATOR—cleans the air and automatically lubricates cylinder . . .

WRITE FOR FOLDER

Modernair CORPORATION

4222 HOLLIS STREET • OAKLAND 8, CALIFORNIA

▲ Mention Item NED-970 when writing ▲

$58,653 SCREW COSTS SAVED BY ENGINEERS DUE TO SPECIAL DEVELOPMENT

KEENE, N. H. (Special) — A saving of $58,653 in screw costs alone for one customer, together with a reduction in weight amounting to 31½ tons, is the remarkable achievement credited to engineers of the New England Screw Company of this city. The saving was made through development of a special screw which replaced two screws formerly used.

"This saving is directly attributable to our Engineering Department," the president of the 50 year old firm, declared today. "Our customer asked us to develop a single part to replace two screw machine parts which were the bottleneck in otherwise high-speed production. Subsequent research revealed how we could make a saving of 43% in material on one item and 230% on the other. In actual production we used 23,370 pounds of brass wire as against 87,172 before. And the single part does the job better!"

Illustration on left shows one of the many special screws developed by this firm. Their Engineering Department will gladly co-operate with the engineers of any manufacturer using standard or special screws or headed shanks. The new catalog which fully describes the manufacture of New England Screws, will be sent to any company requesting it.

NEW ENGLAND SCREW COMPANY
KEENE, NEW HAMPSHIRE

▲ Mention Item NED-971 when writing ▲

FOR DIE GRINDING - DIE SINKING AND SNAGGING

NEW ROUND DUST COLLECTION BENCH WITH TURNTABLE TOP

- Helps operator work comfortably in dust-free air
- Relieves operator of necessity of wearing respirator
- Downdraft through grating pulls dust away
- Outer guard rail stationary
- Turntable moves work to any position
- Available in 1000 lb. capacity
- Self contained

Speed up production, improve quality and eliminate health hazards with this revolutionary dust collecting bench.

Address Dept. B for information.

WOLVERINE EQUIPMENT CO.
31 MAIN ST., CAMBRIDGE, MASS.

▲ Mention Item NED-972 when writing ▲

PNEUMATIC SCREWDRIVER

Designed for fast driving of small screws, two models of this pneumatically driven screwdriver are available to handle screws up to No. 6 range. Model No. 1671 screwdriver has free speed range of 2500 revolutions per minute and will handle delicate screw driving operations up to No. 3 screws. Model No. 1672 has free speed of 10,000 revolutions per minute and accommodates screws in the No. 3 to No. 6 range. Both models are usable wherever small screws are to be driven on production basis as in assembly of radio parts, electrical appliances, alarm clocks, telephones, plastic products, toys and novelties.

Screwdrivers feature pneumatic pick up of screw which enables operator to pick up screw with air suction finder and drive it directly into work. Both models weigh only 8 ounces each and measure 5½ inches in length. All parts are interchangeable. Made by **Keller Tool Co.**, Dept. N., Grand Haven, Mich.

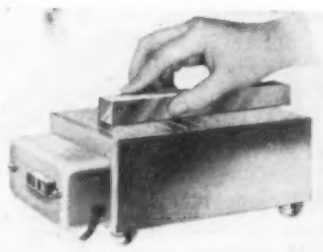
▲ Mention Item NED-973 when writing ▲

MASONRY DRILLS

Line of Red Streak carbide tipped masonry drills is designed to drill concrete, brick, tile, slate and other nonmetallic materials. They have generous carbide tips and are available in off-set and straight shank styles in drill diameters of 0.198 to 1.535-inches. Drills can be adapted to any rotary powered or hand drill. Advantages of use include up to 75 per cent faster drilling speed, and elimination of pressure drill wear and noisy percussion. Made by **Vascoloy-Ramet Corp.**, North Chicago, Ill.

▲ Mention Item NED-974 when writing ▲

DEMAGNETIZER

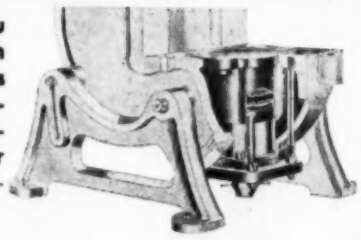


Improved portable demagnetizer is suitable for demagnetizing large or small pieces and requires only one quick pass to completely demagnetize object. When used with drills, punches, reamers, tools and dies, part to be demagnetized is passed over surface of unit. Larger pieces and parts can be demagnetized by passing unit over the piece. Demagnetizer has segmented flat top grid with segments spaced to produce equal magnetic field over entire surface. Surface is ground to mirror-like finish to eliminate scratching of objects handled. Automatic self-resetting switch acts also as overload cutout to protect against primary surges. Aluminum case protects unit. Standard sizes include 4½ x 7¼, 7¼ x 7½ and 7½ x 14-inch top plates. Special sizes are available and voltages and cycles as required can be supplied. Made by **Luma Electric Equipment Co.**, 1112 Dorr St., Toledo 1, O.

▲ Mention Item NED-975 when writing ▲

+ INCREASED PRODUCTION
— REDUCED SETUP TIME
= DAYTON ROGERS DIE CUSHIONS

No matter how you figure it Dayton Rogers Die Cushions will assure better results and lower production costs on your punch press operations because:



1. They are readily adapted to either short run quantity requirements or for large quantity production.
2. They automatically convert a press from single action to double action for deep drawing work.
3. Correct pressure pad control on forming dies obtained quickly by simply adjusting the pressure regulator.
4. They afford positive stripping action on all compound, blanking and piercing dies.

Write for illustrated engineering catalog # 100-13

DAYTON ROGERS *Manufacturing Company*
MINNEAPOLIS 7, MINN.

▲ Mention Item NED-976 when writing ▲

Bri

In a single operation, Brightboy burrs, finishes and polishes. Thus these in-between production steps are "bridged"—saving time and eliminating operations. Brightboy's *rubber* binder cleans and polishes simultaneously with the burring and finishing operation of the abrasive.

Ask your dealer for catalog, prices and applications-data; a Brightboy service man for production-procedure recommendations.

BRIGHTBOY INDUSTRIAL DIVISION
Weldon Roberts Rubber Co., Newark 7, N. J.

WELDON ROBERTS Brightboy

the SOFT RUBBER BINDER CUSHIONS the Abrasive

▲ Mention Item NED-[illegible] when w[illegible]

MATHEWS CONVEYER COMP[illegible]
ELLWOOD CITY, PENN
PORT HOPE, ONTARIO • SAN CARLO[illegible]

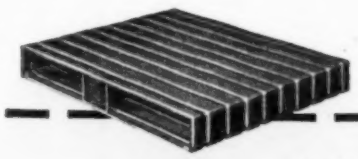
▲ Mention Item N[illegible]en writi[illegible]

Use your "air rights" to save your floor space!

LET Union Metal sturdy, steel pallets, skids and boxes help you keep valuable floor space clear for production needs—to be all-around, on-the-job helps to . . .

★ SPEED PRODUCTION
★ SAVE TIME
★ CUT COSTS

These extra-rugged, long-lasting units are designed to help you store or handle raw materials or finished products in unit loads—with maximum efficiency, safety, economy. Stock items to meet most standard requirements and special designs for special needs. For complete information, write The Union Metal Manufacturing Company, Canton 5, Ohio.



▲ Mention Item [illegible]n writing

Brightboy

REG. U. S. PAT. OFF.

*BRIDGES THE GAP BETWEEN GRIND AND BUFF

This original Brightboy slogan introduced a new type of metal-finishing. Brightboy has since become a "buy word" for leading American industries.

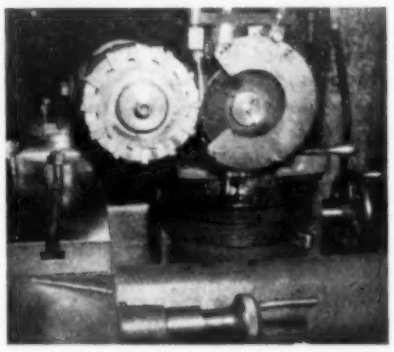
▲ Mention Item NED-980 when writing ▲

PALLET LIFT TRUCK

Having 2000-pound capacity, hand operated pallet lift truck features lightness in weight, enclosed working parts and elevation actuated by hydraulic foot pump. High strength alloy sheet steel formed into box sections comprises frame and aluminum alloy is utilized for wheels and other nonstructural parts. Truck is light enough for two men to lift from ground level to highway truck. Length of stroke of hydraulic foot pump is optional, depending on stature of operator. Lowering is accomplished by pushing foot pedal forward. Pump is equipped with relief valve to prevent overloading and possible damage. Made by **LYON-Raymond Corp.**, 3247 Madison St., Greene, N. Y.

▲ Mention Item NED-980 when writing ▲

DIAMOND GRINDING WHEELS

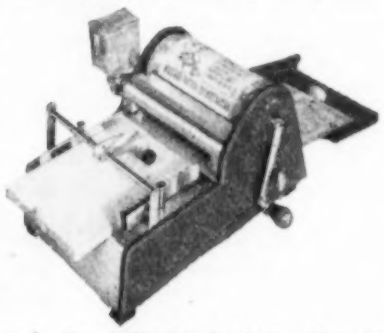


Featuring resin bond which does not load or glaze when in contact with soft or hardened tool steel shanks, Manhattan diamond wheels are especially adaptable for grinding carbides and carbide tipped tools. Complete line of wheel types and shapes is available in grit sizes ranging from 60 to 400. Full wheel life is said to be effected by elimination of dressing or lapping usually required to clean wheel bond. Made by Manhattan Rubber Div., **Raybestos-Manhattan, Inc.**, 94 Townsend St., Passaic, N. J.

▲ Mention Item NED-981 when writing ▲

DUPLICATING MACHINE

Several improvements have been made on this Copy-Rite liquid duplicating machine (*Item NED-1026, Feb. '46*). Machine has been reduced in weight approximately 20 pounds by replacing cast iron parts with aluminum fabricated mechanism. Nine parts have been eliminated from automatic paper feed device to make unit practically foolproof. Machine provides for instant starting and employs neither wicks nor pumps. Made by **Wolber Duplicator & Supply Co.**, 1201 Cortland St., Chicago 14, Ill.



▲ Mention Item NED-982 when writing ▲

LOOK TO CENTRAL

CENTRAL PAPER COMPANY, INC. MUSKEGON, MICHIGAN

CENTRALINE

CUSTOM BUILT AND SPECIALTY PAPERS

FOR 46 years, engineers and builders of special and technical papers for industry. Complete "pulp to paper" mill under continuous laboratory control. Send us your paper requirements for laboratory analysis and recommendation.

FOR SPECIAL PAPER NEEDS

CENTRAL PAPER COMPANY INC.

2436 Lakeshore Drive • Muskegon, Michigan

BRANCHES IN LEADING CITIES

▲ Mention Item NED-984 when writing ▲

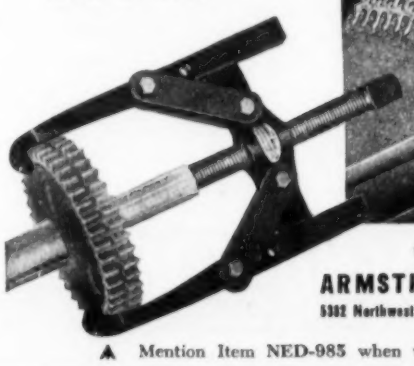
The ABCs of Belt Lacing

ARMSTRONG-BRAY & CO.

A stands for Accurate Alignment assured by WIREGRIPS patented blue aligning cards. Applications easily and quickly made with any standard make lacer or lacing machine.

B stands for Better STEELGRIP Belt Lacings that penetrate belt easily, clinch smoothly into better joints. Belt life that's longer. Belt efficiency that's higher.

C stands for the Complete Line with both standard types of belt lacing; couplings for round belts, lacers and lacing machines, and belt cutters as well as a complete line of wheel and gear pullers comprising 12 types and 40 sizes.



Write for Catalog

ARMSTRONG-BRAY & CO.

5332 Northwest Highway, Chicago 30, U.S.A.

▲ Mention Item NED-985 when writing ▲

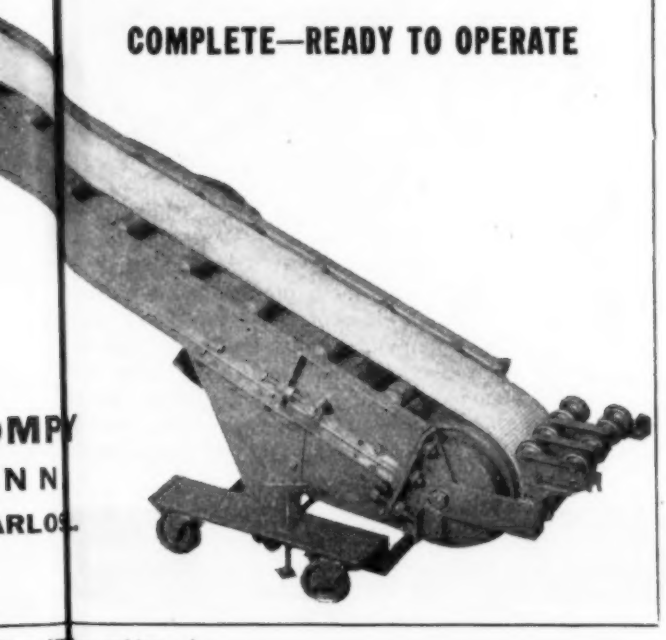
MATHEWS

PORTABLE BELT CONVEYERS

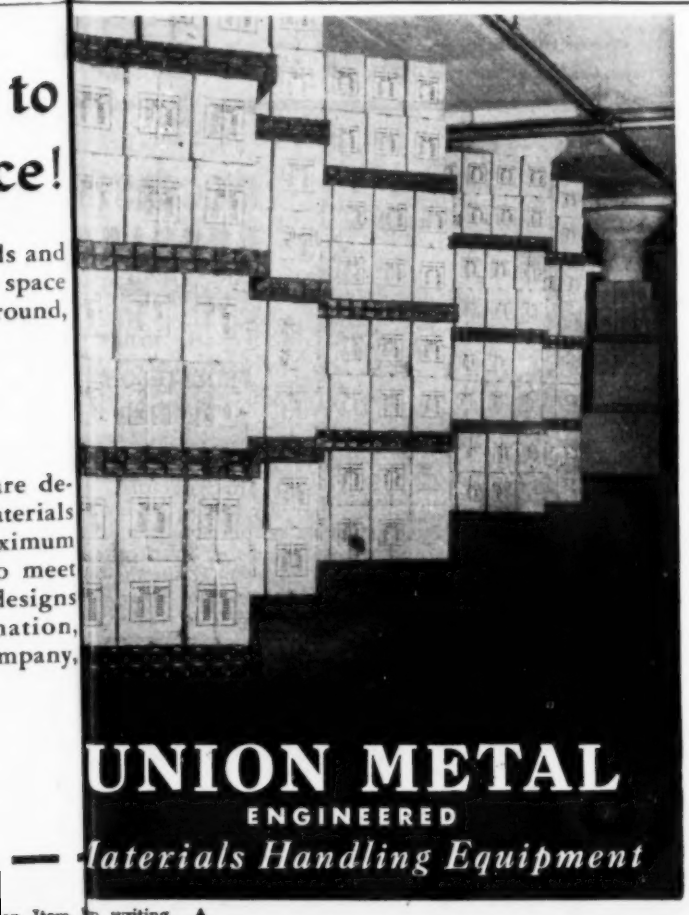
10'-0" - 16'-0" - 19'-0" LONG

12" BELT WIDTH

COMPLETE—READY TO OPERATE



▲ Mention Item NED-983 when writing ▲



UNION METAL

ENGINEERED

Materials Handling Equipment

▲ Mention Item NED-987 when writing ▲

You'll get CLEAN, DRY AIR with the AIR SEPARATOR

WRITE FOR BULLETIN

THE LEAVITT MACHINE COMPANY

190 East River Street, Orange, Mass.

Dexter AUTOMATIC AIR SEPARATORS

ALSO MAKERS OF DEXTER VALVE RESEATING MACHINES, ATHOL PLUMBING SUPPLIES AND DEXTER LATHE CHUCKS

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GATKE BRAKE LINING CLUTCH FACINGS FRICTION BLOCKS

GATKE Clutch Facings are made for all applications

GATKE Moulded Brake Blocks and Frictions are made to fit all makes of Shovels, Draglines, Cranes, Hoists, Dredges, etc.

Gear Toothed Clutch Facings with integrally moulded teeth

Cone Type Clutch Facings

GATKE High-Heat-Resisting Asbestos Brake Materials are made for all requirements of Machines, Presses, Material Handling, Road Building, and Excavating Machinery.

Engineered to do the job right.

Just tell us what you need.

GATKE CORPORATION

220 N. LASALLE ST., CHICAGO, ILL.

▲ Mention Item NED-986 when writing ▲

SPRACO
PAINTING EQUIPMENT

SPRAY ENGINEERING CO., 104 Central St., Somerville 45, Mass.

▲ Mention Item NED-988 when writing ▲

WHEN IS A MACHINE *"Washed Up"?*

A five-year-old Machine Tool is "washed up", for instance, if it can be replaced by one costing a few hundred dollars that will write itself off in less than a year through improved production. That's the story of Walker-Turner Machine Tools wherever metals, wood or plastics are drilled, cut or shaped.

A key to high manufacturing efficiency and **low manufacturing costs** is the modern, flexible, light machine tool. It represents small capital investment, flexibility of operation, increased productivity and low operating costs.

These machines are "light" only in weight and price. Their production output in the past eight years has astounded the management of thousands of plants—large and small—throughout the country. 34

walker-Turner COMPANY, INC. PLAINFIELD, N.J. U.S.A.

MACHINE TOOLS

DRILL PRESSES—HAND AND POWER FEED • RADIAL DRILLS • RADIAL SAWS
METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES
RADIAL CUT OFF MACHINES FOR METAL • MOTORS • BELT & DISC SURFACERS

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Anything Special on Your Mind?

Do you need anything special in the way of thermostats and pressure switches? United has the perfect combination of design and manufacturing experience to fill your needs—at low cost! Hundreds of manufacturers of industrial products have called on us for, and have been satisfied with, this unusual service. See what we have done for others by writing for catalog showing standard and special United controls. Better yet, send us your temperature and pressure control problems for the right, economical solution.

THERMOSTATS & PRESSURE SWITCHES

United Electric Controls Company
71 A STREET, BOSTON 27, MASSACHUSETTS

▲ Mention Item NED-990 when writing ▲

DESK ILLUMINATOR

Utilizing polaroid filter to eliminate glare from desk top and reading matter, this Mitchell desk illuminator has two fluorescent lamps as light source. Light passes through concealed polaroid filter and only soft even rays are permitted to reach desk. This is claimed to reduce eye strain and worker fatigue. Lamp is of all metal construction and styled to fit on any desk. Made by **Mitchell Mfg. Co.**, Dept. N-2, 2525 Clybourn Ave., Chicago, Ill.

▲ Mention Item NED-991 when writing ▲

SAFETY GOGGLES

Mounted for easy shifting from eyes to forehead for layout and inspection during welding operations, Cesco Speed-Shaft goggles have comfortable plastic headgear. Flip of one hand moves goggles in and out of position. There is no interference with personal glasses worn under goggles.

Goggle cups are attached to headgear and controlled by coil springs. Springs are mild enough to eliminate pressure yet strong enough to hold goggles firmly in place. Headgear is easily adjusted to any size head and can be cleaned with cloth. Made by **Chicago Eye Shield Co.**, 2335 Warren Blvd., Chicago 12, Ill.

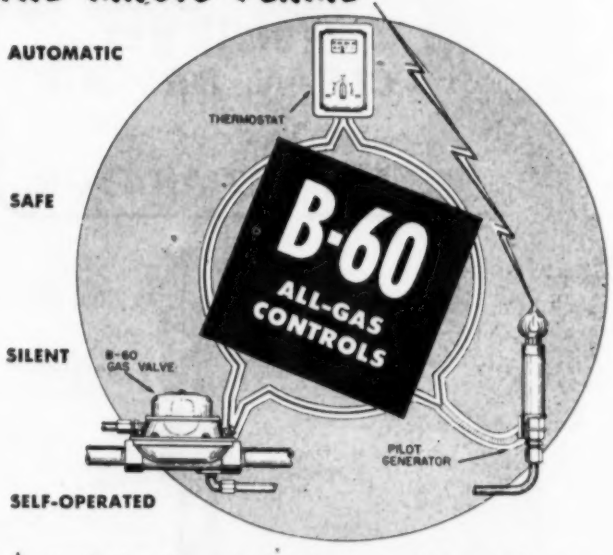
▲ Mention Item NED-992 when writing ▲

COIL HAND TRUCK

Designed for rapid and easy handling of strip coils, wire coils, wheels, tires or any article which has hole through it, this coil hand truck is equipped with adjustable arm to pass through hole. Pulling back on handle lifts load and balances it over truck wheels. Lifting fork is adjustable to height of hole in load to be handled. If article is stacked against wall, it does not have to be touched by trucker. Made by **Sabin Machine Co.**, 6536 Carnegie Ave., Cleveland 3, O.

▲ Mention Item NED-993 when writing ▲

THE MAGIC FLAME



A completely self-contained and self-operating control system. For natural, manufactured or L.P. gases. For all kinds of domestic, commercial or industrial applications. System consists of the B-60 pilot operated diaphragm type gas valve, the T-80 Series Trimtherm Thermostat which is scientifically correct in design, and the ingenious pilot generator which produces electrical energy necessary to operate control system. B-60 Series of Controls have set new standards throughout the Gas Industry. Request Catalog.

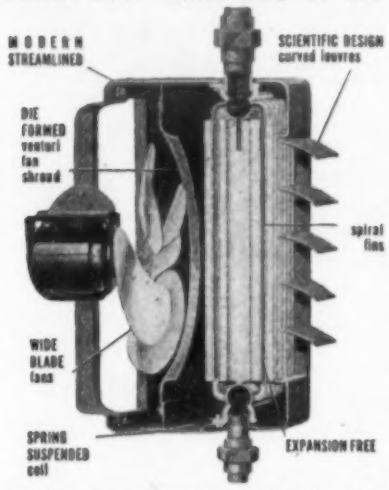
GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF. 14-4

FACTORY BRANCHES: PHILADELPHIA • ATLANTA • BOSTON • CHICAGO • DALLAS
KANSAS CITY • NEW YORK • DENVER • DETROIT • CLEVELAND • PITTSBURGH
HOUSTON • SEATTLE • SAN FRANCISCO • DISTRIBUTORS IN PRINCIPAL CITIES

▲ Mention Item NED-994 when writing ▲

Unit Heater . . sets new standard of quietness and heating efficiency

McCord Unit Heaters are a time proven product, embodying design based on years of experience in the heat transfer field. These units are not only rugged in design and guaranteed for use on #150 p.s.i. steam pressure, but are made attractive in appearance. Two outstanding features appeal to maintenance engineers — we use standard motors with standard bases which quickly permits the use of replacement motors should a motor fail in service—the heating element is made of individual spiral fin tubes which are free to expand independently without putting a strain on the brazed joints. The entire heating unit is spring suspended and floats free in the casing, eliminating rigid connections. Improved type fan blades deliver large volumes of air with minimum air noise and vibration which makes these units suitable for office and store use. A complete line of vertical projection type unit heaters and blast coils are also available. Catalog on request, or write for new folder "Instructions for Maintenance of Unit Heaters." **McCord Corporation**, Detroit, Mich. *Advt.*



▲ Mention Item NED-995 when writing ▲

Universal Collet Chucks grip tools on a continuous surface—not at just a few points. That means a greater, more positive gripping power. Tools can't work free under heavy feeds, high speeds, or extreme vibration. They firmly grip tool flutes, permitting stubbing. Universal Collet Chucks tighten faster and easier, too—reduce locking effort 50%! Write for particulars.

UNIVERSAL ENGINEERING CO., FRANKENMUTH, MICHIGAN

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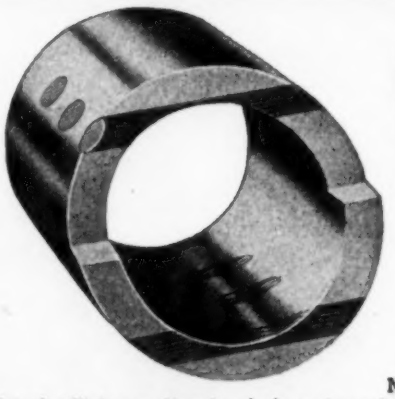
. . . JUST TRY 1



MOCCASIN BUSHING
on your most **TROUBLESOME BEARING**

The success of Moccasin Bushings' efficiency lies in their unique lubrication principle. Oil is drawn from a reservoir in the bearing housing and is distributed by capillary action in a continuous, unbroken film over the entire bearing surface. Drippage and seepage of oil is entirely eliminated, and under ordinary circumstances they require attention only two to four times a year—just try one on your most troublesome bearing. Guaranteed for satisfactory service.

Moccasin
BUSHING COMPANY
CHATTANOOGA, TENNESSEE

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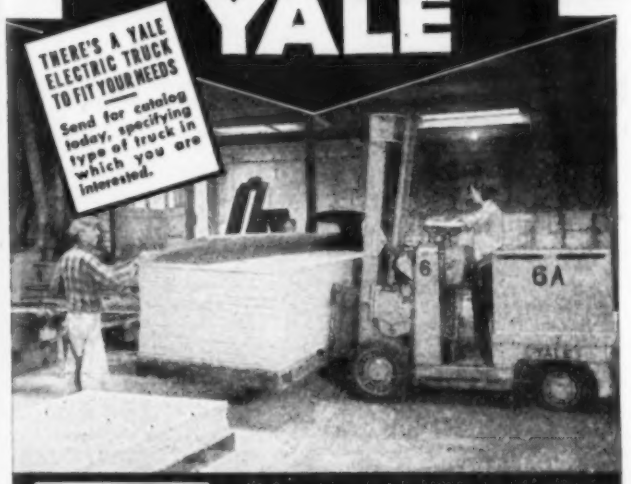
COSTS YOU LESS PER TON

...when you move it with a

YALE

THERE'S A YALE ELECTRIC TRUCK TO FIT YOUR NEEDS

Send for catalog today, specifying type of truck in which you are interested.



YALE THE YALE & TOWNE MANUFACTURING CO. 4530 Tacony Street Philadelphia 24, Pa.

HAND LIFT TRUCKS • HAND AND ELECTRIC HOISTS • KRON DIAL SCALES

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Specify

MICANITE

all-temperature Insulation

for most of the advantages of pure mica—at only a fraction of the cost

Resists Heat and Cold—unaffected by temperatures as high as 1800° F.

Resists Moisture and Corrosion—withstands dampness, condensation, exposure and dilute acid solutions.

Possesses High Dielectric Strength—ranging from 60 to 625 volts per mil.

Readily Molded, Cut or Stamped—can be fabricated into intricate shapes with a minimum of waste.

Versatile in Application—available in sheet or tube form; as flexible, segment or heater plate, or in composite sheets or wrappings with varied properties suitable for insulating motor and generator coils, end-windings and cores.

Send today for free 4-page bulletin on MICANITE insulation. Insulation specialists for over 50 years.

Sales Offices and Fabricators in Principal Cities

MICA Insulator COMPANY
Dept. 34, Schenectady 1, New York

▲ Mention Item NED-999 when writing ▲

Have you looked here?

You may find the answer to your handling problems—*free!* This book is packed with ideas on how to stop waste effort and delay. How electric power can do your work, while your operators just push buttons. And how the P&H Zip-Lift combines these savings in a low-cost electric hoist easily adapted to hook, jib, or trolley. You'll be glad you sent for it—Bulletin H20-1.

General Offices: 4537 West National Ave., Milwaukee 14, Wis.

HARNISCHFEGER CORPORATION

HOISTS • WELDING ELECTRODES • MOTORS P&H EXCAVATORS • ELECTRIC CRANES • ARC WELDERS

▲ Mention Item NED-1000 when writing ▲

FLEXIBLE NECK FLASHLIGHT

Equipped with flexible metallic tubing which can be bent to any angle and held in adjusted position, Flex-Spot Flash-Lites are available in three styles. Tubing can be wound around rods, pipes or other hangers or flashlight can be laid on ledge with spot light directed where wanted, thereby freeing workman's hands. Flexible tube permits entrance into close quarters and facilitates placing of light so that it illuminates relatively inaccessible locations. Junior and Junior Deluxe models use two AA Penlite type batteries and are intended for general use. Standard size uses two standard flashlight batteries for longer life and heavy duty service. Made by **Holub Industries, Inc.**, 411 DeKalb Ave., Sycamore, Ill.

▲ Mention Item NED-1001 when writing ▲

SHIELDED ARC ELECTRODES

Producing machinable welds on all grades of cast iron, Page Ni-Cast shielded arc electrodes can be used with alternating or with polarity direct current. Electrodes are recommended for repairing broken or worn castings and casting defects and for correcting errors made in machining. After machining or grinding, weld metal deposit closely matches color of cast iron parent metal.

Core has content of over 99 per cent nickel. Electrodes have quiet stable arc that is free from spatter with minimum of penetration and heating of cast iron. Weld metal deposit is sound, homogeneous and free from porosity. Electrodes are available in 3/32, 1/8, 5/32, and 3/16-inch diameters and are packed in 10-pound cartons. Made by Page Steel & Wire Div., **American Chain & Cable Co.**, Monessen, Pa.

▲ Mention Item NED-1002 when writing ▲

CHEMICAL FEEDER

Available in range of sizes to handle from 3000 to 1,000,000 gallons of water per month, Micromet chemical feeders proportion chemical flow into industrial water to prevent corrosion or scale in hot water or cooling systems. Feeders hold up to 20, 50 or 100 pounds of Micromet at one charge. Chemical dissolves slowly at rate of 25 per cent per month so that only that much of initial charge need be renewed each month. Treatment gives assurance that heat exchange equipment and air conditioning units will provide efficient service and that taste or potability of water used for drinking or cooking will not be affected. Made by **Calgon, Inc.**, 321 Fourth Ave., Pittsburgh 30, Pa.

▲ Mention Item NED-1003 when writing ▲

Snap-on Wrenches

For Efficient Maintenance

FOR hundreds of routine maintenance jobs such as this, modern Snap-on wrench equipment provides speed, adaptability and accessibility, with safe, powerful leverage to turn the biggest, tightest nuts.

In Snap-on's heavy duty 6-socket wrenches the automatic locking device makes any combination of handles and sockets *safe as a one-piece wrench* . . . and the thumb button release permits quick change of hookup to fit the job. Standard Snap-on socket wrenches are available in complete series of handles and sockets in 1/4", 3/8", 1/2", 3/4", 1" and 1 1/2" square drives, with wrench sizes ranging from 3/16" up to 3 1/2". Write for 1945 Snap-on catalog.

Snap-on Tools THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION, 8042-B 28th Ave., Kenosha, Wis.

▲ Mention Item NED-1004 when writing ▲

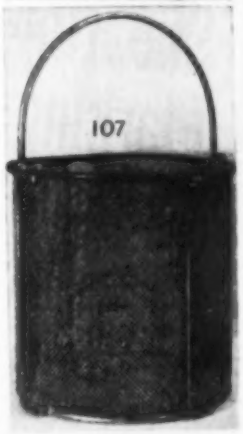
HEAT-TREATING
ANNEALING
DEGREASING
PICKLING
SPRAYING

BASKETS by Stanwood

Stanwood Baskets are correctly designed for the efficient and economical handling of the parts for which they are intended—every size, shape and mesh is available.

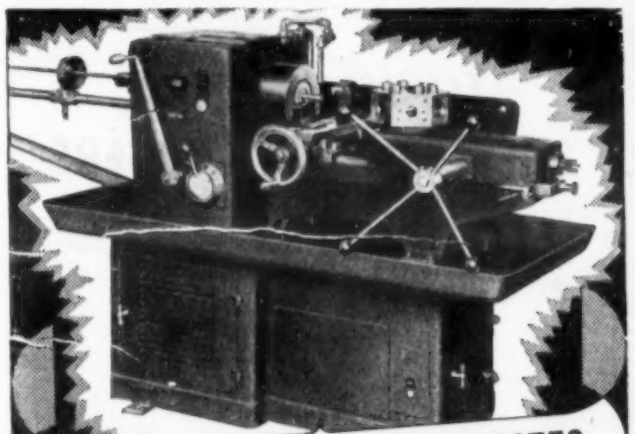
Long service life is assured by the use of properly selected heat and corrosion resisting alloys for heat treating, quenching, pickling, degreasing, washing and other processes.

Let Stanwood engineers prescribe the basket ideally suited for your specific needs. Send for Bulletin 15, which pictures and describes modern day baskets, trays, fixtures, retorts, carburizing boxes and special containers.



Stanwood Corporation
4821 W. Cortland St. Chicago 39, Ill.

▲ Mention Item NED-1005 when writing ▲



THE LATHE THAT ACCOMMODATES ITSELF TO *Your* REQUIREMENTS

The Oster No. 601 "RAPIDUCTION" Lathe

This up-to-date machine can be furnished to meet YOUR specific needs . . . as a "basic machine," complete excepting special equipment which either YOU or WE can design, as you prefer . . . or as an entirely complete machine with a variety of optional features such as automatically indexed, 6-station turret or with plain saddle; either WORM drive or DIRECT drive; either 2-speed or 4-speed motor, etc.

Your specific inquiry will receive prompt attention. Write:

OSTER THE OSTER MANUFACTURING COMPANY 2066 E. 61st St. • Cleveland 3, Ohio, U.S.A.

No. 601 *Rapiduction* LATHE

▲ Mention Item NED-1006 when writing ▲

Take a Dart Apart

Two bronze seats ground to a true ball joint *insure* a drop-tight connection without excessive wrenching. Regardless of length of service, a Dart uncouples easily and without damage—is ready for a new job wherever needed. Body and nut are of high-test air-refined malleable iron—are practically indestructible.

That's why it pays to standardize on Darts. Ask your supplier to send some with your next order.

E. M. DART MANUFACTURING COMPANY, Providence 5, Rhode Island

▲ Mention Item NED-1007 when writing ▲

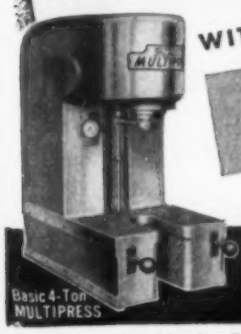
Blanking Forming Pelleting Shearing Marking Assembling

ON SCORES of jobs like these, MULTIPRESS users report increased production and efficiency, better results.

The reason: remarkable operating flexibility has been built into the highly compact, self-contained basic MULTIPRESS—and an unusually wide range of standard MULTIPRESS controls, toolings and accessories multiplies this flexibility!

In addition, Denison engineers are constantly finding better ways to apply MULTIPRESS advantages to operations of every kind.

MULTIPRESS offers 4, 6, or 8-ton units in seven models . . . manual or automatic controls . . . accessory benches, worktable extensions, side shelves and bolster plates . . . attachments for indexing, pelleting, foil marking, etc. . . . toolings for almost any need. Write for details.



WITH MULTIPRESS

THE DENISON ENGINEERING CO.
1151 Dublin Rd., Columbus 16, Ohio.

DENISON EQUIPMENT APPLIED HydroOiLics

▲ Mention Item NED-1008 when writing ▲

"PIONEER" STEEL SHAFT HANGERS

Thousands upon thousands of these "Pioneer" Steel Shaft Hangers are in daily use—and have been ever since 1914. They are unbreakable—their superior strength and rigidity make them dependable. They are one-third lighter than the old style cast-iron hangers, *and therefore cost less f.o.b. ceiling—and that's what counts.* Cut costs of handling, hauling and millwrighting by using "Pioneer" Steel Shaft Hangers, made by the manufacturers of the famous "Hallowell" Ready-Made Shop Equipment of Steel and "Unbrako" Screw Products.

OVER 43 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.
JENKINTOWN, PA. BOX 581
BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-1009 when writing ▲

FOLEY FILED SAWS Pay big dividends . . . . . HERE!

Only the best saw sharpening can give you top-speed production. The Foley Saw Filer quickly puts old saws with dull and irregular teeth back in perfect condition—and keeps them perfect! 25% to 40% increase in production is frequently realized with Foley-filed saws.

ONE machine files cross-cut circular saws, band saws, hand saws.

30 DAY TRIAL OFFER

permits you to use a Foley Saw Filer in your own shop. You can't lose on this offer—write or send coupon.

FOLEY Automatic SAW FILER

FOLEY MFG. CO. 23 - 2nd St. N. E. Minneapolis 13, Minnesota

Please send literature, and details of your 30-DAY TRIAL OFFER.

Name.....

Address.....

▲ Mention Item NED-1010 when writing ▲

WATER POWERED GRINDER

Powered by water supply from any tap, Turbo grinder equipped with 3-inch silicon carbide grinding wheel can attain speeds from 3000 to 10,000 revolutions per minute, depending on water pressure available. Power unit is small enough to fit in palm of hand. Vinylite hose with slip-on connection fits most water faucets and connects unit to source of water supply. Jet impeller and case are made of die cast aluminum. Case is chrome plated. Hardened stainless steel shaft operates in Chrysler Oilite bearings which require no lubrication. Grinder unit is priced at $8.95 retail. Made by **Hudson Products Co.**, 4400 St. Aubin, Detroit, Mich.

▲ Mention Item NED-1011 when writing ▲

V-BELT PULLEYS

Added to line of step-cone pulleys, variable speed pulleys, flexible couplings and plain pulleys (*Item* NED-4268, *July* '46) 11 and 16-inch pulleys are available. These additions extend range of pulley sizes to include from 1½ to 16-inch diameters. Pulleys are balanced for high speed operation and have precision-bored holes that are held to close tolerances. Made by **Congress Tool & Die Co.**, Die Casting Div., 3750 E. Outer Dr., Detroit 12, Mich.

▲ Mention Item NED-1012 when writing ▲

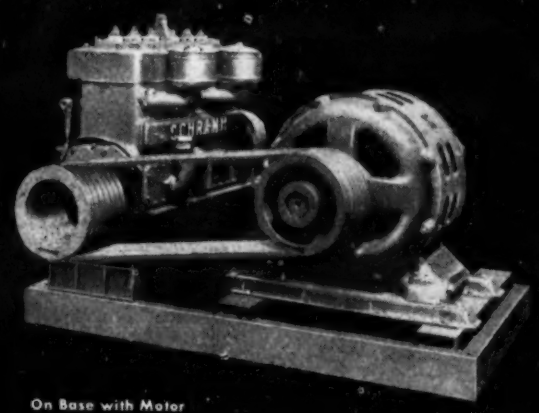
OIL FILTER

Capable of removing impurities as small as 5 microns, Greer Micronic oil filters can be supplied to meet almost any pressure and flow requirements. Illustrated type is 30-gallon per minute 250-pound per square inch filter. In operation, fluid enters filter at intake port and is directed against shield which diffuses flow and prevents impurities from striking element directly. Oil then flows inward through element, through series of oil slots in center shaft and out through discharge port. Sediment collects in bottom of shell and is eliminated through drain port.

Filtering element of unit can be replaced in less then 10 minutes. There are no moving parts to replace and only maintenance requirement is replacement of filtering element when abnormal amount of impurities is present in fluid. Made by **Greer Hydraulics, Inc.**, 454 Eighteenth St., Brooklyn 15, N. Y.

▲ Mention Item NED-1013 when writing ▲

SCHRAMM AIR COMPRESSORS



On Base with Motor

Schramm Belt Drive Compressors are intended for heavy duty, continuous service with minimum attention. The flat belt drive may be driven from line shaft or any other prime mover, and is suitable for service twenty-four hours per day and will perform such service with the least up-keep and operating costs. Where running water is not available, the Schramm Cooling Unit will prove adequate under the severest conditions.

SCHRAMM INC. WEST CHESTER, PA.

▲ Mention Item NED-1014 when writing ▲

In this union, too, there is STRENGTH

Solder permanently with . . .

KESTER CORED SOLDERS

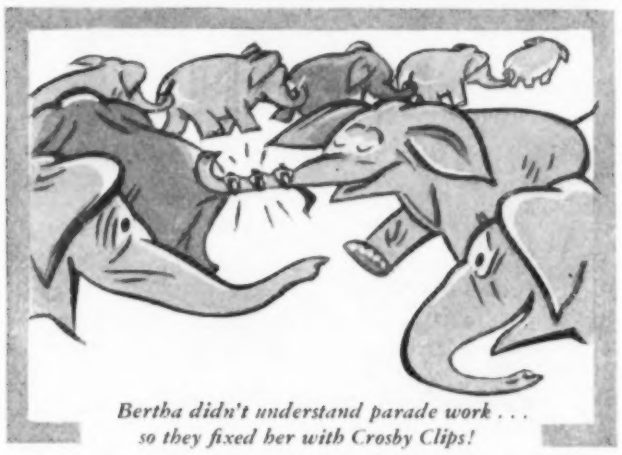
• Made for staying power and rugged dependability, Kester Cored Solders are applied in a single, simple operation. The flux-filled cores, scientifically balanced with superior alloys, are your assurance of fast, easy application — virtually mistake-proof solder jobs.

• The uniform high quality of Kester Cored Solders is backed by nearly half a century of practical experience and exhaustive laboratory tests. Available in a wide range of strand and core sizes, Kester Cored Solders are adaptable to every soldering job. Kester engineers invite your inquiries regarding any solder problems you may have. There is no obligation.

KESTER SOLDER COMPANY
4249 Wrightwood Avenue, Chicago 39, Ill.
Eastern Plant: Newark, N.J. Canadian Plant: Brantford, Ont.

KESTER Cored Solders
STANDARD FOR INDUSTRY

▲ Mention Item NED-1015 when writing ▲



Bertha didn't understand parade work . . . so they fixed her with Crosby Clips!

For the long pull, there's one best wire rope fastener . . . CROSBY CLIPS. Safe, simple, speedy; applied anywhere by one man with one wrench. *Drop-forged*, not cast. Made only by AMERICAN HOIST and Derrick Co., St. Paul, Minnesota. Distributors everywhere.

Industry buys more

CROSBY CLIPS

than all other drop-forged fasteners

▲ Mention Item NED-1016 when writing ▲

Another New DE-STA-Co HEAVY DUTY Plunger Clamp

DE-STA-Co MODEL NO. 620
Reverse Action-Plunger Type

A new, versatile, plunger type clamp, designed to assure positive parallel clamping action during welding, drilling, assembly or milling operations. Excellent for quick-action and the locking of work in jigs and fixtures.

Plunger rod is tapped to receive ⅜"—16 bolt for adjusting. Reverse action permits operating ease in congested areas and where working height is limited.

Available from our distributors in the U.S.A. and Canada.

Write today for catalog No. 47

DETROIT STAMPING CO.
Established Over 30 Years
360 Midland Ave • Detroit 3, Mich.

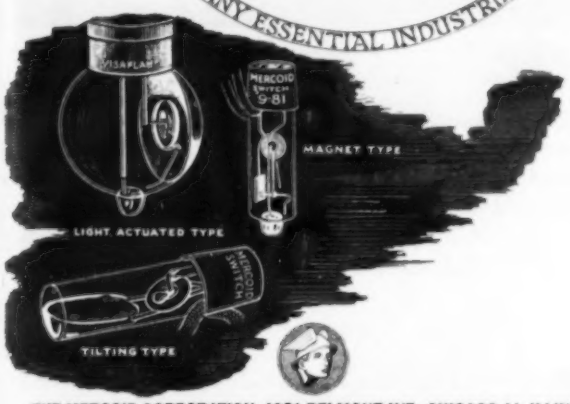
▲ Mention Item NED-1017 when writing ▲

USED EXTENSIVELY ON ALL TYPES OF AUTOMATIC HEATING EQUIPMENT ★ USED ALSO ON MANY ESSENTIAL INDUSTRIAL APPLICATIONS ★

MERCURY SWITCHES

are used in all Mercoid Controls. They assure better control performance and longer control life. That is why Mercoid Controls rate a very high percentage of customer satisfaction —a good reason for featuring—

MERCOID CONTROLS

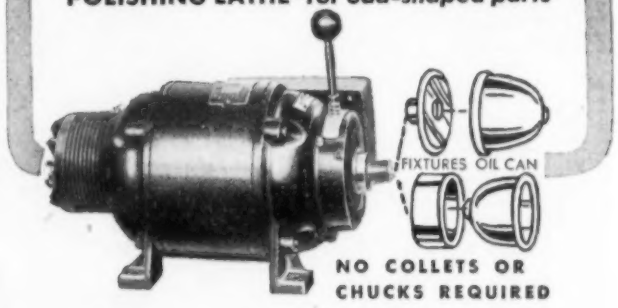


THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO 41, ILLINOIS

▲ Mention Item NED-1018 when writing ▲

New Vacuum Grip

POLISHING LATHE—*for odd-shaped parts*



Parts which cannot be held by chuck or collet—odd-shaped parts such as oil can bodies, spun shapes and flat stampings—are now readily handled by the new Crozier Vacuum-grip Polishing Lathe.

The lathe generates its own vacuum, without piping or glands. It starts, holds the work (copper, brass, aluminum, zinc, magnesium, plastic as well as steel), stops instantly, releases the work automatically for low cost production. All work is held firmly for polishing and burnishing and many other operations.

We design and make special fixtures for your jobs. This service is speedy and inexpensive.

Model 1VPL Crozier Vacuum-grip Polishing Lathe, has a 1"-8 thread spindle. Furnished with an 1800 or 3600 r.p.m. 220-440 or 550 volt 3-phase 50 or 60 cycle motor, the price is $290 f.o.b. factory.

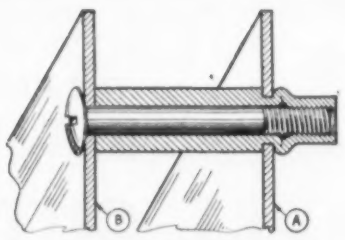
Write for data on complete lathe line.

Another Unsurpassed Machine Tool **Crozier** *From Crozier Craftsmen*

CROZIER MACHINE TOOL CO., HAWTHORNE, CALIFORNIA

▲ Mention Item NED-1019 when writing ▲

RIVNUTS SOLVED THIS TOUGH FASTENING PROBLEM



FASTENING of spaced double walls on gas stove backs was too complicated and awkward; air circulation was faulty. This problem was solved with a 10-24 thread aluminum Rivnut with a ½" spacer head. Using simple header tool, Rivnuts were inserted in sheet "A" and upset. With matching holes of outer sheet "B" in place, screw attachments were entered and screwed into the strong threads of the Rivnuts. Air could circulate freely, fire hazards were reduced.

NEW "RIVNUT DATA BOOK" *includes illustrated uses, types, tools, test data. Perhaps your fastening problem will be answered in these 40 fact-packed pages. Write to*

B. F. Goodrich, Dept. NED-27, Akron, O.

▲ Mention Item NED-1020 when writing ▲

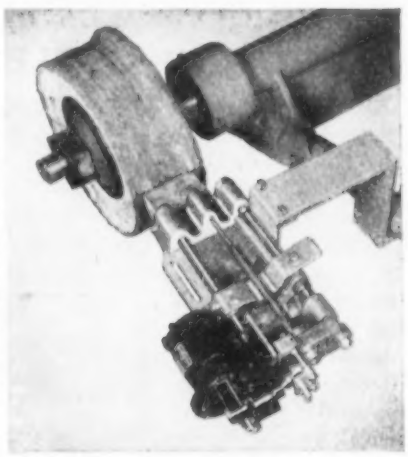
SHEET PLASTIC FOLDING UNIT

Hand fed foot operated Thermocreaser will rapidly crease or fold cellulose acetate, ethyl cellulose, vinyl acetate and cellulose nitrate plastic sheets at right angles. Machine is thermostatically controlled and will handle thermoplastic sheeting up to 30 inches in width. Either rubber or metal forming die can be used and actual crease or fold is formed as heated blade comes in direct contact with stock and presses it into metal die or rubber pad.

Folding units are designed to operate on 115 or 230-volt alternating or direct current circuit. Standard operating controls include indicator lights for current and thermostatic element, adjustable thermostat to raise or lower temperature of creasing or folding blade, thermometer which registers blade temperature and movable back gages for proper creasing position of material. Machine is free of sharp corners and recessed edges and mechanism is fully enclosed. It requires no lubrication. Totally inexperienced operator, after brief training and practice, can form right angle bends with repetitive uniformity. Made by Plastics Equipment Div., **Taber Instrument Corp.**, Dept. NED, 111 Goundry St., North Tonawanda, N. Y.

▲ Mention Item NED-1021 when writing ▲

COMPOUND APPLICATOR



Operating at fourteen strokes per minute, this Nankervis buffing wheel compound applicator has feed range of from 0.0015 to 0.015-inch per stroke. Applicator can be mounted on any automatic machine, either right or left hand, and is adaptable for operations from simple to complex multiple stage buffing. Drive is by means of totally enclosed geared head motor. Applicator clamp is adjustable to handle various thicknesses of compound and sticks up to 4 inches in length can be used.

Total weight of unit is 20 pounds. Its light weight makes it adaptable to floating heads without disturbing balance. Motors to drive applicator are available for operation on 110, 220 or 440 volts. Special carriers for extremely wide cakes can be furnished. Made by **George L. Nankervis Co.**, 5442 Second Blvd., Detroit 2, Mich.

▲ Mention Item NED-1022 when writing ▲

Pyra-Shell

Reg. U. S. Pat. Off.

TRANSPARENT *Utility* BOXES

Light in weight, easy to handle. Patented construction makes them rigid and durable. One of the many compartment arrangements available in our standard ribbed boxes will no doubt be exactly suitable for your needs. If not, we will be glad to consider a special box. Write for folder.

Wide Range of Sizes, Styles and Compartment Arrangements

Address Utility Box. Dept. D

SHOE FORM CO. INC. AUBURN, N. Y.

▲ Mention Item NED-1023 when writing ▲

ELECTRONIC AMPLICALL INTERCOMMUNICATION **for Action Everywhere in Your Business!**

Get fast, productive action within your key departments. Here's what AMPLICALL Intercom does: In the general office—promotes more efficient routine. In the production department—expedites operations. In the engineering department—smooths development work. In the inspection department—improves coordination. And for *overall* communication, an inter-departmental AMPLICALL System provides elbow-close management control. For *action* where it counts *most* in your business, put AMPLICALL on the job! Write us today.

The unit illustrated is the W200 Series AMPLICALL with facilities for up to 24 master stations, permitting 12 conversations to be carried on simultaneously. Fast, easy operation; clear, life-like conversation; private.

ELECTRONIC Intercommunication ENGINEERED to your REQUIREMENTS

Electroneering is our business

RADIO • RADAR SOUND **Rauland** COMMUNICATIONS TELEVISION

THE RAULAND CORPORATION • CHICAGO 41, ILLINOIS

▲ Mention Item NED-1024 when writing ▲

SOLDERLESS—TAPELESS *Wire Connectors*

SOLAR SCRU-ITS

"MR. SCRU-IT" (Trade Mark)

Solar SCRU-ITS are used for connecting two or more wires without tape, solder, flame or tools. They are economical and easy to use—wire ends are stripped and SCRU-ITS screw right on to form a compact and efficient joint.

SCRU-ITS give better mechanical and electrical contact . . . eliminate possibilities of shorts, grounding and corrosion. Their compact size permits their use where working space is at a minimum.

Available in several sizes for connecting various combinations of wires.

EASY TO USE:

1. STRIP WIRE

2. SCREW IT

3. THAT'S IT with SCRU-ITS!

MILLIONS IN USE • HUNDREDS OF APPLICATIONS

"Roughing-in" or permanent wiring is simplified with SCRU-ITS . . . they thread on with a twist of the wrist . . . and the joint is complete!

- Fixtures
- Outlet Boxes
- Fuse Boxes
- Panel Boards
- Switch Boxes
- Lighting Devices
- Conduit Boxes
- Circuit Breakers
- Switch Controls
- Motor Connections and many others.

DON'T TAPE DON'T SOLDER "SCRU-IT"!

- MADE IN FOUR SIZES
- MAY BE USED WITH SOLID OR STRANDED WIRES

Write for Data Sheet W-2

For complete specifications on SCRU-IT sizes, uses, prices, etc., WRITE TODAY.

U. S. PATENT NO. 1,933,555

SOLAR ELECTRIC CORPORATION

FACTORY and SALES OFFICES

WARREN, PENNSYLVANIA

▲ Mention Item NED-1025 when writing ▲

Who's right?

The sad looking welder at the top . . . or laughing boy below?

Actually, they're both right.

Right because they've based their comments on the electrodes they use.

That smiling guy at the bottom uses Ni-Rod*.

Naturally, he thinks cast iron welding is a cinch.

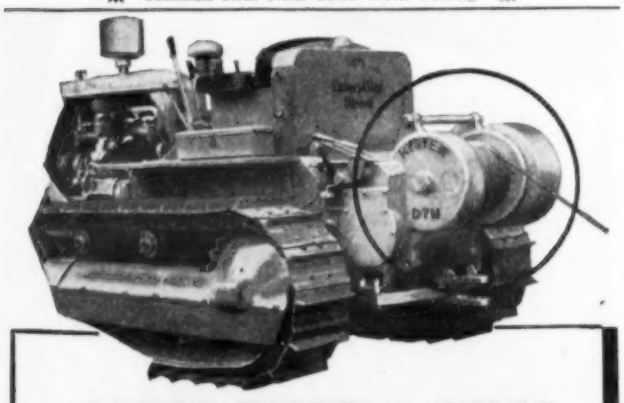
*Reg. U. S. Pat. Off.

TRY NI-ROD YOURSELF. Your nearest INCO distributor has this easy-handling rod in 3/32", 1/8", 5/32" and 3/16" sizes.

SEND FOR INSTRUCTION BOOKLET

THE INTERNATIONAL NICKEL COMPANY, INC.
69 Wall Street, New York 5, N. Y.

▲ Mention Item NED-1028 when writing ▲



ADDS EXTRA PULL to your "CATERPILLAR" Track-type Tractor...

A Hyster winch on a "Caterpillar" adds more power to pull — 50% to 80% more drawbar capacity — an unbeatable combination for the tough jobs . . . Hyster makes a complete line of equipment for "Caterpillar" track-type tractors and is the world's largest producer of tractor winches. *Write for catalog.*

HYSTER COMPANY
2906 N. E. Clackamas St., Portland 8, Oregon
1806 North Adams Street, Peoria 1, Illinois
Sold and Serviced by "Caterpillar" Distributors

▲ Mention Item NED-1029 when writing ▲

SPRAY NOZZLE INFORMATION
CATALOG NO. 22

FOR LOWER SPRAYING COSTS

Surprising as it may seem, spray nozzles alone are often a highly important element in the efficiency of a process or operation involving spraying. Spraying Systems can provide Spray Nozzles that offer two important advantages: (1) design based on a specialized experience in spray nozzle engineering and (2) wide range of sizes to obtain characteristics such as capacity and degree of atomization that meet specifications exactly. Write for Catalog No. 22 . . . gives complete information.

SPRAYING SYSTEMS CO.
4029 W. Lake Street • Chicago 24, Illinois

Hard Hitting Flat Spray FLATJET

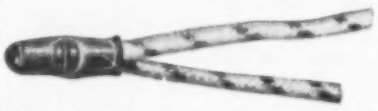
Supplied in a wide variety of sizes for every application. Ideal for cleaning operations where sharp concentrated spray is needed.

SPECIALISTS IN SPRAY NOZZLE DESIGN AND MANUFACTURE

▲ Mention Item NED-1030 when writing ▲

SOLDERLESS WIRE CONNECTOR

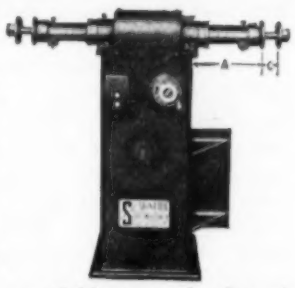
This solderless fixture type splicing connector makes pigtail splices that will not become loose under continuous vibration conditions encountered in electric fans, appliance motors and similar equipment. Connectors are furnished with insulation attached. Permanent, insulated splices are made with single operation of AMP hand tool or press die, without soldering, wire twisting or taping. Insulating sleeve extends beyond metal barrel of connector, completely covering and protecting ends of wire insulation. Small size of connector is advantageous where space is restricted. Made by **Aircraft-Marine Products Inc.**, 1591-K N. Fourth St., Harrisburg, Pa.



▲ Mention Item NED-1031 when writing ▲

BUFFING & POLISHING UNIT

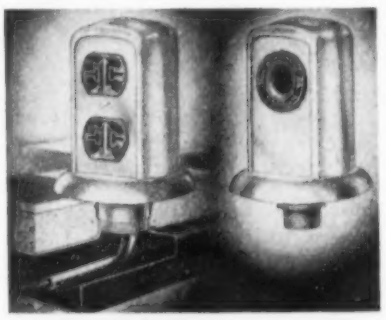
Line of nine models of infinitely variable speed buffing and polishing machines ranging from 1 to 15 horsepower includes redesigned 2 and 3-horsepower models of either enclosed or open spindle types. Illustration shows enclosed spindle construction. It has four ball bearings, sight feed oil gage on each bearing housing and shaft lock. Enclosed ball bearing motor is mounted on adjustable base attached to back of pedestal with power transmitted to spindle through belt drive. Spindle speeds adjustable from 1500 to 3000 revolutions per minute are available instantly through Speedial control. Change of spindle speed is recorded immediately on dial. Drive is guarded and units include pushbutton safety starter having overload protection. Made by **Standard Electrical Tool Co.**, 2488 River Rd., Cincinnati 4, O.



▲ Mention Item NED-1032 when writing ▲

ELECTRICAL OUTLETS

Designed for use with Nepcoduct underfloor wiring distribution systems, these two service fittings screw into standard outlets of underfloor duct. Fitting No. 7903, at left of illustration, has standard duplex T-slot receptacle and is to be used for high potential light and power wiring. Telephone, buzzer and intercommunication low potential wiring in plant offices and office buildings are serviced at floor levels with fitting No. 7904, at right of illustration.



Either model electrical outlet is wired and assembled with single screw through housing top. One-piece housing double locks in flange base to eliminate possibility of shearing off wires. Fitting No. 7903 can be furnished with 3-pole twist lock receptacles instead of duplex when specified. Illustrated installation suggestions are included in individual shipping containers. Made by **National Electric Products Corp.**, Chamber of Commerce Bldg., Pittsburgh 19, Pa.

▲ Mention Item NED-1033 when writing ▲

IMMEDIATE DELIVERY

New

Lead-Wire Thermoregulators
(adjustable mercury temperature regulators)

for better temperature control at lower cost

Here's Waglinco's latest development—a thermoregulator with many improved features including a three-foot plug-in lead wire that can be removed from the thermoregulator in a jiffy, thus eliminating the bother of disconnecting lead wire from relay when changing temperature setting, inspecting, etc. If desired, regulator can be supplied with standard pipe thread mounting for screwing into equipment. Available with either a sensitivity of ±.02°F. or ±.004°F. Temperature range of both types, minus 30°F. to plus 700°F.

W026	—6-inch Thermoreg. (sensitive to .02°F.)	$12.00
W027	—8-inch Thermoreg. (sensitive to .02°F.)	13.00
W028	—10-inch Thermoreg. (sensitive to .02°F.)	14.00
W029	—12-inch Thermoreg. (sensitive to .02°F.)	15.00
W036	—8, 10, or 12-inch Thermoreg. (sensitive to .004°F.)	18.50

Further Information on Request

Suitable Relays for All Our Thermoregulators Are Available—Write for Details

THERMOREGULATORS-THERMOSTATS-RELAYS-GLASS APPARATUS

WASHINGTON GLASS LABORATORY
And Instrument Company
3224 Georgia Avenue, N. W. Washington 11, D. C.

▲ Mention Item NED-1034 when writing ▲

Typical of KAYDON'S successful specialization in difficult manufacture is this flat race ball thrust bearing 22.000" x 26.000" x 1.000". Races are only .3125" thick, held to .001" parallelism. Bearings are made 4" bore to 120" O. D.

KAYDON specializes in all types of ball and roller bearings, 4" bore to 120" outside diameter. Atmospheric control in heat treating is available at KAYDON. KAYDON offers added services in flame hardening, precision heat treating, metallurgical laboratories, microscopy and physical testing. Contact KAYDON for every need.

KAYDON *Standard or Special Bearings:* Spherical Roller • Taper Roller • Ball Radial • Ball Thrust • Roller Radial • Roller Thrust

THE KAYDON ENGINEERING CORP.
MUSKEGON • MICHIGAN

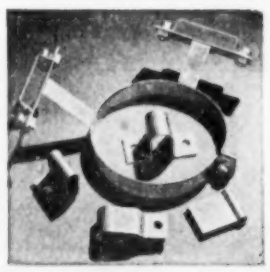
▲ Mention Item NED-1035 when writing ▲

Reduce handling costs and you reduce production costs . . . reduce production costs and you increase profit margins. You can reduce handling costs to a minimum with Towmotor Fork Lift Trucks, designed for 24-hour, full-power service . . .lifting, transporting and stacking all types of materials and products. Send for a Pocket Catalog. Towmotor Corporation, Division 25, 1226 East 152nd Street, Cleveland 10, Ohio.

TOWMOTOR FORK LIFT TRUCKS *and* TRACTORS
RECEIVING · PROCESSING · STORAGE · DISTRIBUTION

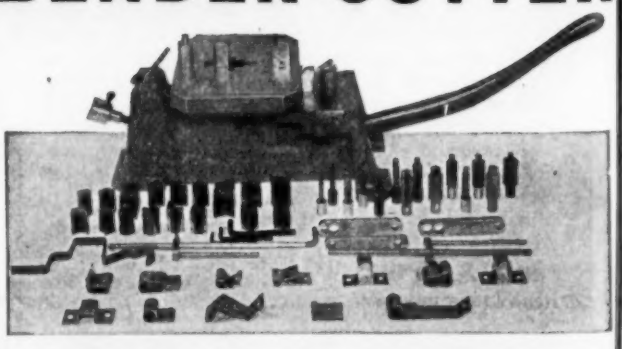
▲ Mention Item NED-1036 when writing ▲

MULTIFORM PRODUCTS



The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade for production, experimental and sample work. Short runs up to "5000." It punches holes, cuts the steel, and bends any shape.

THE FAMOUS MULTIFORM BENDER-CUTTER



FOUR-IN-ONE-TOOL
IT BENDS, CIRCLES, ANGLES, PUNCHES, CUTS

J. A. RICHARDS CO., 905 NORTH PITCHER ST. KALAMAZOO 13F, MICH.

▲ Mention Item NED-1037 when writing ▲

CHROMALOX
Electric
HEATING UNITS

Use CHROMALOX Electric Heaters to heat gases, air and liquids. Use them for heating platens, dies and molds. Use them anywhere you want fast, economical, and easy-to-control heat.

CHROMALOX Electric Heaters are easy to install. They come in types and capacities for almost any heating requirement. For full information on their uses—write for "100 Ways to apply Electric Heat" booklet, catalog 42 and address of CHROMALOX Application Engineer serving you.

See other advertisement on page 4

EDWIN L. WIEGAND CO., 7509 THOMAS BLVD., PITTSBURGH 8, PA.

CHROMALOX 1B-37

ELECTRIC HEAT FOR MODERN INDUSTRY

▲ Mention Item NED-1038 when writing ▲

Produce More... at Lower Cost!

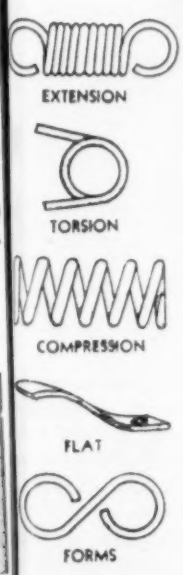
T-J Performance handles tough jobs at *top-speed* and *efficiency*...with *lower costs!* Check the needs in your plant for air cylinders...hydraulic cylinders...Rivitors...cutters...Clinchors...or air controls—specify T-J to do the job *right!* Precision-built...practical...dependable. Write for bulletins. The Tomkins-Johnson Co., Jackson, Mich.

TOMKINS-JOHNSON

30 Years' Experience

▲ Mention Item NED-1039 when writing ▲

PARAGON Springs



A Complete Spring Service

Coil springs, wire forms, flat springs, brazing rings, of all materials, in any quantity and in special designs are now available at Paragon.

A complete service not only in the manufacture of springs but in engineering and consultation on spring design, is yours for the asking.

A special department has been set up for small orders—so don't hesitate to call on Paragon, whatever your spring requirements.

INQUIRIES GIVEN PROMPT ATTENTION

Now Available—31 Assortment-Stock Spring Booklet

PARAGON SPRING COMPANY

WEST FULTON STREET CHICAGO 44, ILLINOIS

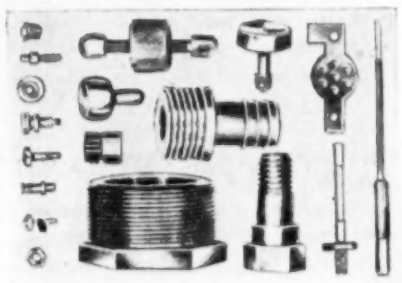
▲ Mention Item NED-1040 when writing ▲

DESK FILE RACK

Available in labeled model for use as desk file and without labels for typist's paper storage, Rite-Spot desk racks have four compartments which hold standard 8½ x 11-inch letterheads. Cabinets are 10½ inches high, 11½ inches front to back and are open at front only. They are constructed of steel, with wire reinforcing at front and back. Standard color is office green. Made by **Gordon L. Hall Co.**, Old Lyme, Conn.

▲ Mention Item NED-1041 when writing ▲

SCREW MACHINE PRODUCTS



Facilities have been expanded and new type equipment has been installed by company to permit production of wide range of automatic screw machine parts to 3½ inches in diameter and hand screw machine parts to 2 inches. This service amplifies metal and plastic parts making and manufacturing service offered. Information available from **Precision Metal Turning Corp.**, 534 W. Broadway, New York 12, N. Y.

▲ Mention Item NED-1042 when writing ▲

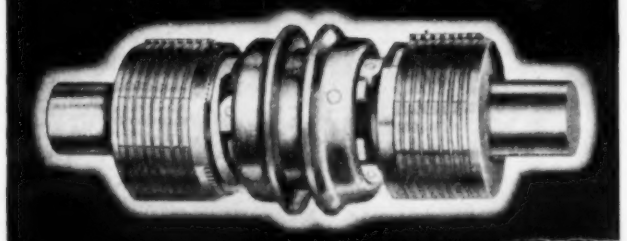
PILLOW BLOCK

Capable of serving a number of shaft diameters, Imperial bronze pillow blocks and flange bearing units are self-aligning and will operate at speeds up to 5000 revolutions per minute. Split high tensile strength aluminum housing carries self-aligning spherical bronze bearing. Ground adapter sleeve is inserted in bronze bearing so that one basic pillow block can serve wide range of diameters.

Bronze bearing foot and flange designs are available. Bearing will take either radial or thrust loads. Line includes sizes adaptable for handling shaft diameters from ⅝ to 3 inches. Made by **Anti-Friction Bearings Co.**, 2020 S. Figueroa St., Los Angeles 7, Calif.

▲ Mention Item NED-1043 when writing ▲

ROCKFORD
PULLMORE



MULTIPLE-DISC
CLUTCHES

COMPACT DESIGN
HIGH TORQUE
HIGH-RATIO LEVERS
POSITIVE NEUTRAL
PRECISION BUILT
LONG WEAR LIFE
EASY ADJUSTMENT

* PULLMORE discs provide high capacity and efficient lever design enables light engaging pressure. Discs are accurately made from special clutch-disc materials and are tested for flatness. Made in single and double types, for operation in oil or dry. PULLMORE clutches have capacities from 1 to 90 H.P. at 500 R.P.M. They handle loads of much greater than rated capacity, when operated at higher speeds.

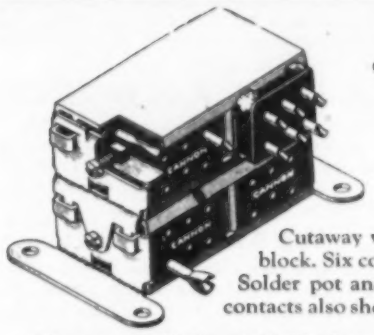
Send for This Handy Bulletin

Shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS. Contains diagrams of unique applications. Furnishes capacity tables, dimensions and complete specifications.

ROCKFORD CLUTCH DIVISION BORG-WARNER
312 Catherine Street, Rockford, Illinois, U. S. A.

▲ Mention Item NED-1044 when writing ▲

MULTIPLE-TO-SINGLE DISCONNECT TERMINAL BLOCK



FOR RADIO and AIRCRAFT LOW AMPERAGE CIRCUITS
5 Amp.

Cutaway view of one section block. Six contact plug engaged. Solder pot and crimp-type single contacts also shown. (No. Y6-2F-2H)

The new "Y6" Terminal Block is a compact and yet flexible means of handling multiple to single and single to single circuits easily and quickly. Both sides of the unit are identical. Units may be added vertically or horizontally with additional top Tenite strip. Write Department B-113 for Bulletin Y6-1.

CANNON ELECTRIC DEVELOPMENT COMPANY
3209 Humboldt Street, Los Angeles 31, Calif.
Canada & British Empire • Cannon Electric Co., Ltd., Toronto, Ontario
World Export Agents (excepting British Empire) Frazar & Hansen, 301 Clay Street, San Francisco 11, California

▲ Mention Item NED-1045 when writing ▲

GET FULL DETAILS
SEND FOR
BULLETIN 940 TODAY!

A GIANT in capacity YET a midget in size

Accurately adjustable control range from 5# to 1500#

GROVE REGULATOR COMPANY
6533 GREEN STREET, OAKLAND 8, CALIFORNIA
Branch Offices: 30 Rockefeller Plaza, New York 20
5644 Navigation Boulevard, Houston 11, Texas
1930 West Olympic Boulevard, Los Angeles 6, California

▲ Mention Item NED-1046 when writing ▲

STAINLESS TUBING DATA

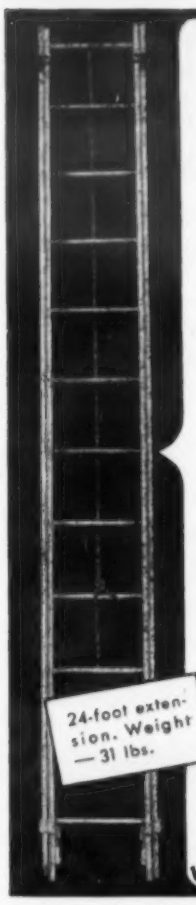
on
- Velocity Constants
- Mass Velocity Constants
- Cross Sectional Areas of I. D. and O. D.
- Sq. Ft. Internal and External Surface Per Lineal Ft.
- Physical Properties
- Available Sizes

Return the coupon today for your Carpenter Stainless Tubing Slide Chart.

THE CARPENTER STEEL COMPANY
Welded Alloy Tube Division • Kenilworth, N. J.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
(Firm Name Must Be Given)
ADDRESS _____
CITY _____ ZONE _____ STATE _____

▲ Mention Item NED-1047 when writing ▲



WELDED MAGNESIUM
LADDERS

SAVE LABOR COSTS
One-man ladders of lightweight magnesium save time, labor and handling charges . . . are stronger, yet weigh less than half as much as wood.

REDUCE ACCIDENTS
Expertly welded and rigidly tested . . . never become loose or unsteady . . . cannot splinter, scratch or break suddenly if overloaded . . . hold many times the weight of wood.

WEAR LONGER
Weather-proof, warp-proof, rust-proof, fire-proof. Withstand more abuse and outwear any number of ordinary ladders. Welded construction remains rigid for life of ladder.

AVAILABLE NOW!
8-, 10-, 12-, 14- and 16-foot straight . . . 24-foot extension ladders.

For complete prices and specifications, phone your distributor or write Dept. L-1

24-foot extension. Weight — 31 lbs.

WHITE
LIGHT LADDERS
WHITE AIRCRAFT CORP., PALMER, MASS.

▲ Mention Item NED-1048 when writing ▲

LABEL MOISTENER

Adaptable for moistening labels, envelope flaps, stamps and fingertips, model No. 345 labeler is said to effect maximum production efficiency. Models are available for handling gummed surfaces ranging from 3½ to 11½ inches in width. Moistening brush has resistance necessary for thorough application of moisture and bristles remain in correct alignment at all times. Feed table of unit is instantly removable to permit easy refilling and cleaning. Made by A. C. Hummel Co., 5349 Kennedy Ave., Cincinnati 13, O.

▲ Mention Item NED-1051 when writing ▲

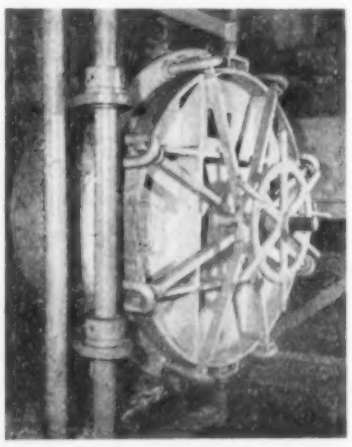
HEATER BRICKS

Line of heater bricks for use in electric stoves, grills and hot plates is available in four colors with all exposed surfaces highly glazed. Glazing eliminates adherance of food, grease and dirt to surface, thus improving sanitation and appearance. Corners are rounded. Bricks are provided with grooves and nubs that allow ample play for expansion and contraction of heater coil and prevent buckling or damage to bricks. Made by General Ceramics & Steatite Corp., Keasbey, N. J.

▲ Mention Item NED-1052 when writing ▲

CONDENSATE OIL FILTER

Developed for naval use in filtering oil from condensate, Hercules filters will handle exhaust from engines of up to 7000 horsepower. Oil content of filtered condensate returned to boilers is less than 0.1-part per million. By using two filters in installation, continuous service is assured. These oil filters are now available for industrial, marine and other uses.



Filter layers of refined asbestos and diatomaceous earth are used. They are deposited by recirculation on series of screens within enclosed filter tanks to separate oil from condensate. Asbestos fibers perform secondary function of binding diatomaceous earth into coherent filter layer which will withstand shock conditions. Runs of as high as 90 hours under capacity requirements are obtainable before standby filter is cut in. Filter is of pressure leaf type. Made by Hercules Filter Corp., 204 21st Ave., Paterson 3, N. J.

▲ Mention Item NED-1053 when writing ▲

It's New! Better! Different!
Black Arrow HOLLOW AIR Spray Gun

Perfect Spray Patterns--Faster, Easier, Less Cost!

Production painters call Black Arrow's HOLLOW AIR Spray Gun the most sensational development in the spray gun field. That's because of its patented HOLLOW AIR Atomizer Head which, in terms of spray results, gives you five big advantages.

1. The widest, wettest, most uniformly distributed spray pattern you've ever seen.
2. Complete atomization of paint over the entire pattern.
3. No spotting at edges, no runs, sagging or orange peel.
4. More economical spray because HOLLOW AIR usually requires less pressure.
5. Much softer spray because HOLLOW AIR blends paint and air perfectly.

See your jobber! Write for catalog.

The Secret of HOLLOW AIR Atomization

Two hollow cones of air, perfectly delivered in relation to the center paint jet by the patented HOLLOW AIR Atomizer Head, are responsible for HOLLOW AIR's superior results. These cones of air carbuerize paint evenly, thoroughly—produce symmetrical patterns, uniformly distributed. This enables operators to produce perfect spray patterns, easily, consistently.

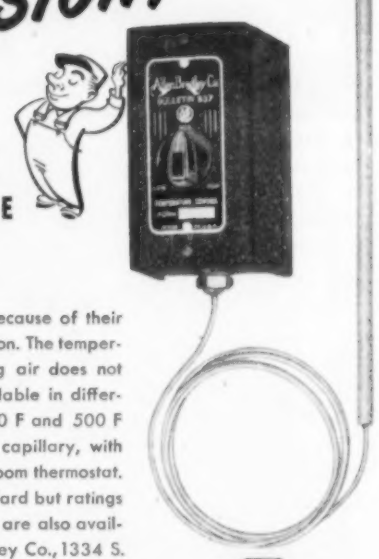
BLACK

The Black Manufacturing Company
1428 W. BALTIMORE ST. • BALTIMORE 23, MD.

Beyond Compare—HOLLOW AIR

▲ Mention Item NED-1055 when writing ▲

LIFETIME PRECISION!



Bulletin 837
TEMPERATURE CONTROLS

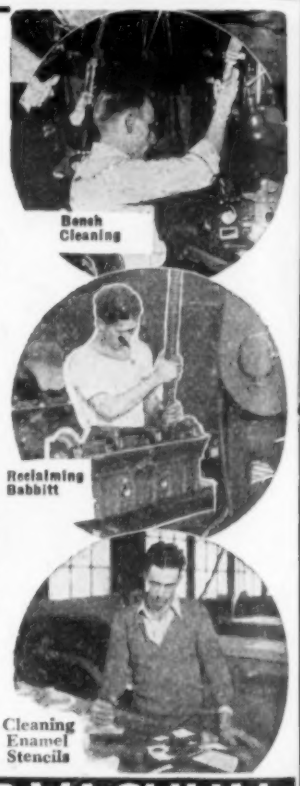
Give accurate control because of their simple, rugged construction. The temperature of the surrounding air does not affect their setting. Available in different ranges between —50 F and 500 F with remote bulb and capillary, with immersion bulb, or in a room thermostat. Pilot duty rating is standard but ratings up to 1½ hp at 220 volts are also available. Write, Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wis.

A-B Quality

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

▲ Mention Item NED-1049 when writing ▲

SPEEDING PRODUCTION with SPENCER VACUUM



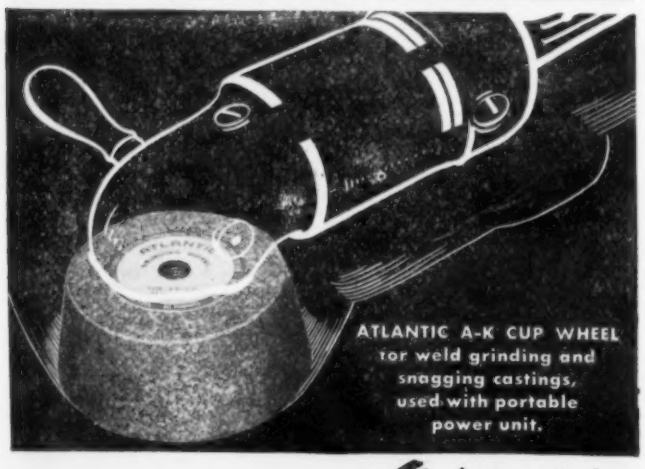
Any production man with imagination can apply Spencer Vacuum to improve or increase production, in a new way.

Three examples are shown on this page. Bench operators pull dust out of instruments and parts instead of blowing it all over the plant. An engine manufacturer recovers babbitt on the production line, and enamel dust is removed from stencils.

Bulletins on request.

SPENCER VACUUM CLEANING
HARTFORD
THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

▲ Mention Item NED-1056 when writing ▲



How do you KNOW...

. . . you can't speed up your grinding operations, safely? All Atlantic grinding wheels are engineered specifically to run safe and cool at higher grinding speeds . . . that's how Atlantic engineers have helped scores of plants "up" their production records.

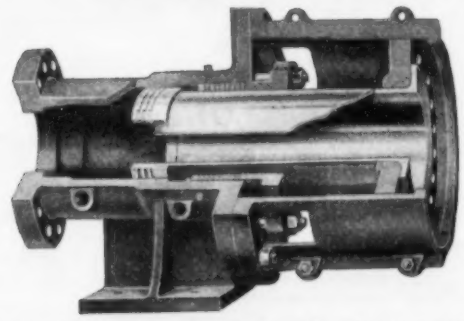
Write today for the free technical advice of an Atlantic engineer. Atlantic Abrasive Corp., 525 Pearl St., South Braintree, Mass.

Atlantic PATENTED RESINOID BONDED GRINDING WHEELS

▲ Mention Item NED-1050 when writing ▲

ADSCO

EXPANSION JOINTS



Single and double joints for high pressures and temperatures, — flanged and bevelled ends. ADSCO Piston Ring Expansion Joints make it possible to add packing without shutting down system. Write for Bulletin 35-151 ED

AMERICAN DISTRICT STEAM CO.
NORTH TONAWANDA, N.Y.

▲ Mention Item NED-1054 when writing ▲

Time studies reveal that when mechanics must fight dirt and grease on machinery, tools and equipment, production speed is slowed 25% to 40%. Periodic JENNY Steam-Spray cleaning not only saves these precious man-hours, but often prevents costly shutdowns by revealing defects in machinery in time to permit repairs before failures occur. JENNY cleans floors, runways, windows, walls, skylights, 8 to 10 times faster than by hand-cleaning methods.

Hundreds of manufacturing plants have adopted JENNY as the quickest, most efficient method for all their cleaning jobs. Let us show you how to increase your plant production by getting rid of speed-retarding dirt and grease the JENNY Steam-Spray Way.

Hypressure Jenny Division of
HOMESTEAD VALVE MFG. CO.
P. O. BOX 84 • • • CORAOPOLIS • • • PENNSYLVANIA

▲ Mention Item NED-1057 when writing ▲

ARE YOU STUCK FOR

PARTS ?

ARE YOU undersupplied on some, and oversupplied on others... with the resulting heavy inventory? Sales low? Unit cost rising? Worker efficiency low because of lack of parts to assemble your product?

ARE YOUR parts suppliers unable or unwilling to make short runs of a few hundred or a few thousand pieces?

YOU DON'T NEED TO BE STYMIED by lack of castings, forgings and particular shapes and materials. Why not try a new proven source?

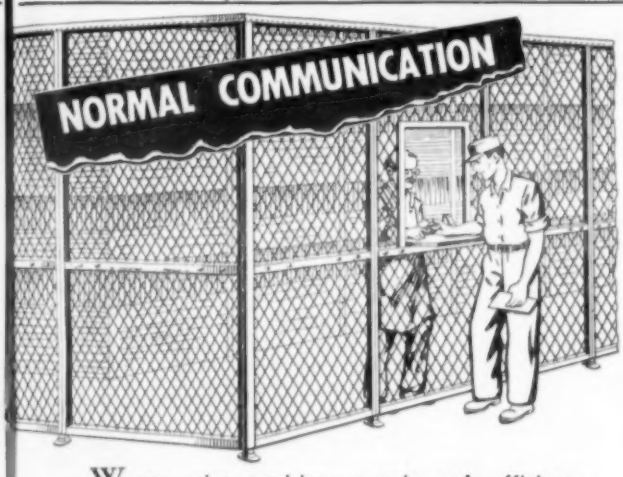
MASTERS' engineers, methods, machines and men are versatile to the Nth degree. Thousands of top quality items have been produced by us for hundreds of leading manufacturers.

LET US FIGURE ON YOUR REQUIREMENTS FOR DURAL, BRASS, STEEL OR STAINLESS STEEL PARTS

IRVIN W. MASTERS, Inc.
3051 ANDRITA ST., LOS ANGELES 41, CALIF.

• Fluid conductor fittings catalog sent on request.

▲ Mention Item NED-1058 when writing ▲



Woven wire partitions permit peak efficiency because they do not interfere with communication nor with proper distribution of heat, light, air.

Logan "STOCK-SIZE" wire panels cost less than wood, yet are fireproof and more durable. Easy to set up, take down, move. The ideal shop separation and property protection. These "STOCK-SIZE" panels (with necessary fill-ins) WILL FIT 90% of cases.

Logan "STOCK-SIZE" Panels and Special Wire Work

Write for low prices today

LOGAN CO., Inc., 1000 Franklin St., Louisville 6, Ky.

LOGAN *Wire Partitions*

▲ Mention Item NED-1059 when writing ▲

Mr. Manufacturer!

IS YOUR PRODUCT HERE?

- ELECTRONIC INSTRUMENTS
- BROADCASTING COMPONENTS
- MEASURING EQUIPMENT
- SOUND RECORDERS
- MOTION PICTURE EQUIPMENT
- PHOTO-CELL DEVICES
- FLUORESCENT SYSTEMS
- RAILROAD SIGNAL SYSTEMS
- PHOTOMETRIC INSTRUMENTS
- TEMPERATURE CONTROLS
- CONSTANT SPEED MOTORS
- COLOR MATCHERS
- HIGH VOLTAGE RECTIFIERS
- TELETYPE EQUIPMENT
- INDUCTION HEATERS
- PHOTOGRAPHY EQUIPMENT

These are typical applications where peak performance depends on stabilized voltages. Standard and custom-made SORENSEN REGULATORS provide a constant power supply for sensitive, precision instruments. Play safe and make SORENSEN REGULATORS standard equipment with your line.

Model 500 — Typically SORENSEN, load range 50 to 500 V.A., input 95-125 volts A.C., output 110-120 volts adjustable, regulation accuracy ±½ of 1%, maximum harmonic distortion 5%.

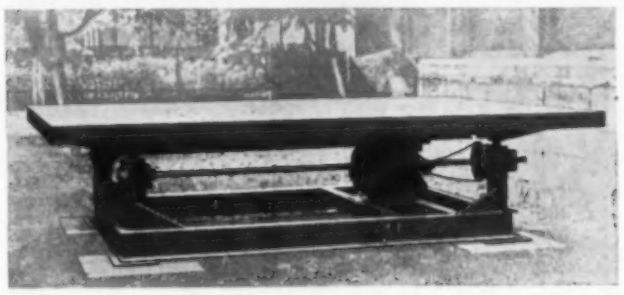
WRITE TODAY FOR CONSULTATION OR CATALOG M-F

SORENSEN & COMPANY, INC.
STAMFORD, CONN.

▲ Mention Item NED-1060 when writing ▲

TRUCK LOADING LEVELER

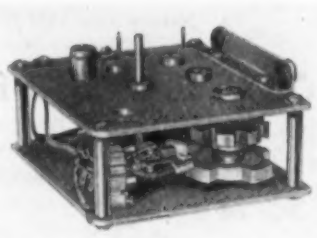
Automatically raising or lowering truck bed to meet level of loading and unloading dock, this electrically operated Dock Lifter speeds handling operations. Entire mechanism is in-



stalled in pit out of way. Top surface of platform is flush with ground surface when not in use or when preparing to take on truck or trailer. Levelers can be furnished to meet special requirements. Made by **Hamilton Tool Co.**, East & Hanover Sts., Hamilton, O.

▲ Mention Item NED-1061 when writing ▲

DIRECT CURRENT MOTOR



Improved by use of speed control which utilizes principle of polarized magnetic drive of vibrating reed, constant speed direct current motor is adapted to industrial and commercial applications which have heretofore required synchronous motors. Immediate self-starting is assured. This motor maintains constant speed regardless of voltage variations and attains full speed almost instantly. Current consumption varies from 0.06 to 1 watt, either from battery or direct current line sources. Models are available for operation on 3, 6, 12, 24, 32 and 110 volts and all are small enough to be held in hand. They are recommended for operation of marine beacons and buoys, aviation signal and obstruction lights, railroad signal devices, time delay controls, automatic radio transmitters and telephone interrupters. Made by **Amglo Corp.**, 4234 Lincoln Ave., Chicago 18, Ill.

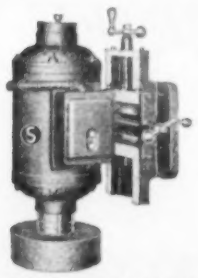
▲ Mention Item NED-1062 when writing ▲

SPIRAL END MILL

Especially suited for pattern work, this progressive spiral end mill will shear evenly throughout length of cutting edge. Mills are four-fluted with right hand flutes. They are avail-

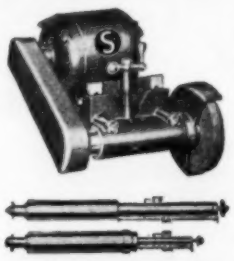
able in sizes ranging from 1 to 6-inch flutes with 1 to 3-degree taper. In operation, mills maintain approximately constant helical angle through cutting edge. Because of spiral, end mill has same shearing and cutting action at all stages of dulling. Tool can be sharpened with the ease of a straight end mill. Made by **Helical Cutter Co.**, 15538 Telegraph Rd., Detroit 23, Mich.

▲ Mention Item NED-1063 when writing ▲



Grinder with Vertical and Horizontal feeds. Available with or without feeds as preferred. Integral mounting pad for rigidity.

"YES SIR—STANDARD VERTICAL SPINDLE GRINDERS GIVE US 'DOUBLE PURPOSE' MACHINES"



YES SIR! You can now make your machine a "double purpose" machine, the "Standard Way". STANDARD VERTICAL SPINDLE GRINDERS and STANDARD INTERNAL-EXTERNAL GRINDERS can be easily mounted on your Planers, Boring Mills, Shapers, Milling Machines, etc., giving you added profits!

Vertical Spindle Grinders range from ½ H.P. to 15 H.P. for straight or cup wheels up to 16" diameter. Also for cylinder wheels, or segmental wheel chucks. Speeds: 1200, 1800, and 3600 R.P.M. Internal-External Grinders have interchangeable quill for internal grinding up to 24" deep.

Write for YOUR copy of Catalog 43, today.

The STANDARD ELECTRICAL TOOL Co.
CINCINNATI · 4 · OHIO
2488 RIVER ROAD

▲ Mention Item NED-1064 when writing ▲

You get arc welding at its best with these new HOBARTS

Every feature is designed to speed work, cut costs. Remote Control lets operator adjust welding heat at the work - Dual Control gives 1000 combinations of welding heat - oversize design and operation at slower motor speeds insure cooler, longer life.

"that's why *Hobart* is one of the world's largest builders of arc welders"

Free "Welders' Vest Pocket Guide," full of data. Write for it today.

If you want to cut your costs, speed production and get better quality welds you'll need a Hobart welder. Write for the complete details.

Hobart Brothers Co., Box ND-27, Troy, Ohio

▲ Mention Item NED-1065 when writing ▲

These 2 men

. . . do the work of 10

with STEVEDORE, Jr.

The Stevedore, Jr. endless belt power driven conveyor works faster and more economically and never gets tired.

Adjustable . . . stacks up to 6'. Portable . . . plugs in any light socket. Carries 200 lbs. distributed load at 65' per minute. It cuts costs for stacking . . . loading and unloading . . . as a pusher in gravity conveyor line.

FREE bulletin gives all details. SEND FOR IT NOW!

OFFICES IN PRINCIPAL CITIES

Manufacturers of STEEL FORGED CASTERS · TRUCKS · CONVEYORS · POWER BOOSTERS

The Rapids-Standard Co., Inc.

Sales Div.—378 Peoples Nat'l Bk. Bldg., Grand Rapids 2, Mich.

▲ Mention Item NED-1066 when writing ▲

Faster Handling

OF PIPE, PLATE, STRUCTURALS

PLATE GRIPS – Safe, positive grips in a variety of sizes for handling vertical plates or upending horizontal plates and assemblies.

PIPE TONGS – Heavy duty tongs for easy handling of pipe, billets, bars, timber. Locks in open position. Picks up from floor surface.

PLATE HOOKS – Handle one or more horizontal plates. Used in sets of 2 or 4. Two styles.

RAIL TONGS – Handles large or small rail. Two sizes with 3" or 4½" jaw.

Write for Illustrated Catalog

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE
LOS ANGELES 37, CALIF.

Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks • Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake Crane Hook Blocks

▲ Mention Item NED-1067 when writing ▲

VULCANIZING— with the New Sarco No. 9 Steam Trap

Vulcanizing uses lots of steam—intermittently. And the cost of steam is a considerable part of the cost of the job.

The New Sarco No. 9 has all the advantages of the thermostatic trap plus greatly increased capacity and speed, making it practical for any heavy heat using job where it is advisable to use up all the available heat before the condensate is released.

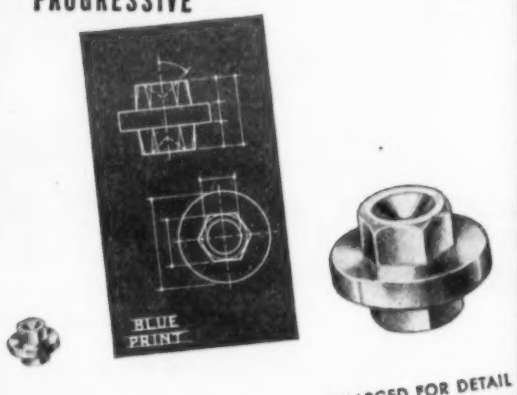
Consider this trap now to replace others—which may be causing unnecessary losses in process, heating, and other hook-ups in your plant. And for best results, put one on every line and steam coil. Ask for Catalog No. 250.

SARCO SAVES STEAM — SARCO COMPANY, INC. 475 Fifth Avenue, New York 17, N. Y. SARCO CANADA, LTD., 85 Richmond St. W., TORONTO 1, ONT. 199

▲ Mention Item NED-1068 when writing ▲

ANOTHER SPECIAL BY PROGRESSIVE

QUALITY PROMCO BRAND



CATALOG SHOWS DOZENS MORE

Special heads, threads and finishes on any metal or alloy adapted to cold upset. Weekly output: 25,000,000 pieces. Many specials, suggesting production savings for you, illustrated in latest catalog. Includes weights per 1M standard pieces, decimal equivs. of fractions, other purchasing and engineering helps. Write for Catalog 18.

The PROGRESSIVE MFG. CO.
46 NORWOOD ST. • TORRINGTON, CONN.

▲ Mention Item NED-1069 when writing ▲

"Sandpaper" For Legs

● One grade of Jewel sandpaper is so fine that it has found widespread use for depilatory mittens. Less glamorous legs require different treatment.

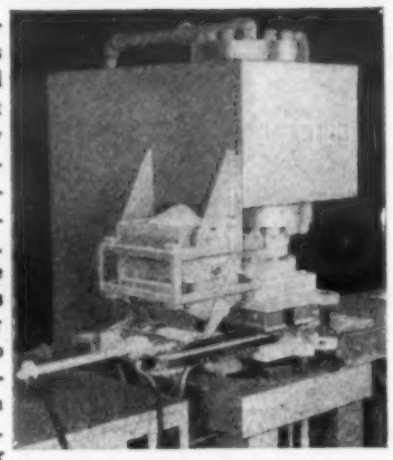
For woodworking there is Jewel *natural* Garnet. In the metal-working field Weldisks and Silver Streak abrasive belts provide heat-resistant grinding mediums that let you speed up your operations safely.

Remember Jewel Abrasives next time you order.

Abrasive Products, Inc.
SOUTH BRAINTREE 85, MASSACHUSETTS · MAKERS OF JEWEL COATED ABRASIVES

▲ Mention Item NED-1070 when writing ▲

HYDRAULIC TILE PRESS

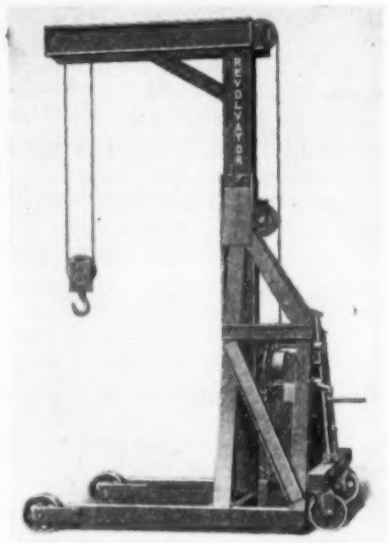


Automatic in operation, hydraulic tile press is especially designed for production of flat and stretcher tile. Clay is automatically unloaded in uniformly measured amounts from hopper to shaker box. Shaker box is adjustable for number of passes over die cavities per cycle and fills each to uniform depth. Floating head de-airs upon initial impact with clay. As ram descends under hydraulic pressure, dies are guided and aligned with die shell. Uniform clearance is thus maintained between upper and lower dies with shell and no bumping occurs upon die entry. As result, lamination caused by die misalignment is eliminated.

Ram action is adjustable from 12 to 14 complete cycles per minute. One operator can handle up to four machines efficiently. Made by **Hufford Machine Works**, 211 N. Broadway, Redondo Beach, Calif.

▲ Mention Item NED-1071 when writing ▲

PORTABLE CRANE



Designed with folding upper section which can be lowered to clear low doorways and other overhead obstructions, portable crane is operated by hand crank. When in raised position, uprights are locked in place by locking pins. Crane is equipped with low speed gear for lifting heavy loads and its maximum capacity is 4000 pounds. It is recommended for use in machine shops, assembly departments, stock rooms, repair shops, warehouses, garages and service stations. Unit has floor lock and steering handle is geared to front wheels which are Timken bearing equipped. Made by **Revolvator Co.**, 2032 86th St., North Bergen, N. J.

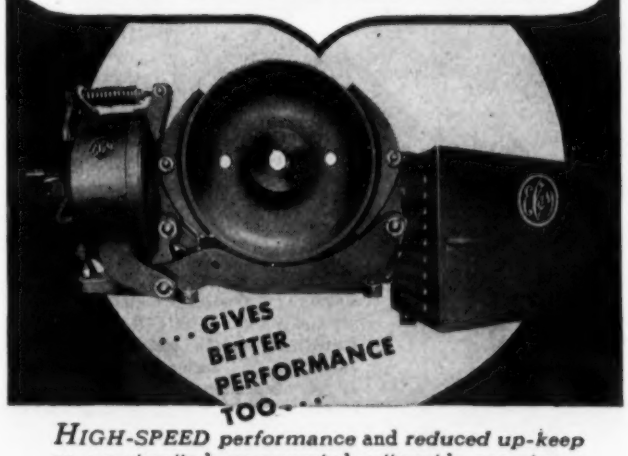
▲ Mention Item NED-1072 when writing ▲

DO YOU KNOW?

Astronomic dial incorporated in 24-hour electric time switches affords means for automatically turning lights or other electrical equipment on at sunset and off at sunrise throughout the year. Deviation of 40 minutes before or after sunset or sunrise can be preselected. Any of company's line of standard 24-hour Tork clocks for lighting service can be equipped with this dial. Made by Tork Clock Co., Mt. Vernon, N. Y.

▲ Mention Item NED-1073 when writing ▲

EC&M TYPE WB BRAKE
SOLVES THE A-C BRAKE PROBLEM



HIGH-SPEED performance and *reduced up-keep* on a-c circuits have prompted nationwide acceptance of this EC&M Type WB Brake with rectifier-unit.

These brakes not only eliminate the laminated members required in a-c brake design, but give quick response. High initial current insures *fast release;* automatic reduction of the holding current results in *fast setting*.

Hundreds in successful use. Send for Bulletin 1006.

THE ELECTRIC CONTROLLER & MFG. CO.
2698 E. 79TH ST. CLEVELAND 4, O.

▲ Mention Item NED-1074 when writing ▲

MOVE MATERIALS FASTER AT LOWER COST THE "Weld-Bilt" WAY

Let a WELD-BILT engineer show you ways to speed up your materials handling methods while reducing your operating costs.

PORTABLE ELEVATORS • HYDRAULIC LIFT TRUCKS • 2 & 4 WHEEL TRUCKS • TIERING MACHINES • BARREL TRUCKS & RACKS

Leading American industries use and endorse WELD-BILT equipment. Write for illustrated folder.

The WELD-BILT Heavy-Duty Hydraulic Lift Truck— 6,000 to 10,000 lb. Capacities.

WELD-BILT
Portable Elevator

WEST BEND EQUIPMENT CORP.
220 Water St., West Bend, Wis.
Materials Handling Engineers

▲ Mention Item NED-1075 when writing ▲

POPULAR!
because it's
portable— practical— profitable

WELLS No. 8

CAPACITY: 8" x 16" Rectangular 8" Diameter Round

Users like Wells Metal Cutting Band Saws for a number of very good reasons. In the first place these saws, though rugged in design and construction, are compact, self-contained, and readily portable. You can move them to a point most convenient to the work. They take up little floor space. Wells saws are also 100% practical—simple to operate, yet capable of handling a wide variety of work without special fixtures. A third important reason for widespread popularity, is that thousands of users have found them highly profitable. For a small investment, you get a versatile tool that can help you in many ways . . . in breaking bottlenecks . . . in getting work out in less time. See your local Wells distributor, or write for details.

Wells Saws — *Products by Wells are Practical*
Wells METAL CUTTING BAND SAWS
WELLS MANUFACTURING CORPORATION 1313 HARDING ST., THREE RIVERS, MICHIGAN

▲ Mention Item NED-1076 when writing ▲

CLEANS OUT COSTLY DUST POCKETS

This new self-contained dust collector takes care of dust that would otherwise ruin productivity, quality and profits. It's small enough to be put in any "dust pocket"—yet has proven features of large Pangborn collectors. Minimum piping and installation expense. Pangborn's "CK" is described in Bulletin 910. Address Pangborn Corporation, Hagerstown, Maryland, *world's largest manufacturer of dust control and blast cleaning equipment.*

Pangborn
PANGBORN CORPORATION HAGERSTOWN MARYLAND

▲ Mention Item NED-1077 when writing ▲

SEALING CAPS AND SLEEVES

FOR LOW COST PROTECTION

G-E Sealing Caps and Sleeves are swollen in a dilater and shrink-fitted at room temperature over pipe ends, bottle tops, electrical connectors. They are used extensively in industrial fields for protection against dirt, moisture, oil, paint. Send for Technical Report, *Section V-1, Plastics Divisions, Chemical Department, General Electric Co., Pittsfield, Mass.*

GENERAL ELECTRIC

CD-47-21

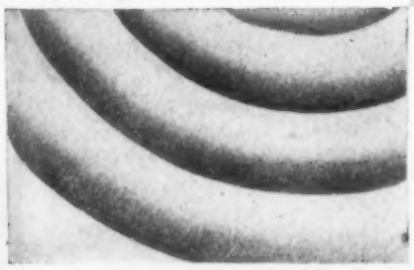
▲ Mention Item NED-1078 when writing ▲

"COMMERCIAL" STANDARD STEEL SHAPES

The latest edition of our shape book is now being mailed.

It supersedes all others...if you never received one before write for this new edition—"Shape Book No. 7."

Listing circular steel shapes available without die or tool charges.... A necessity for all buyers interested in circular stampings.



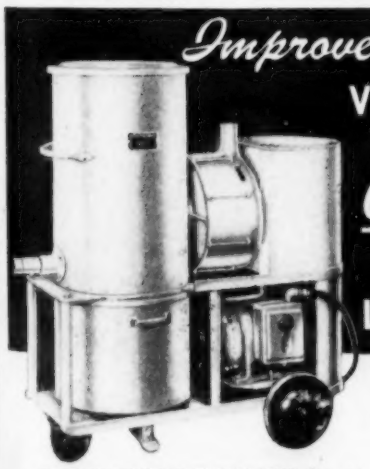
THE COMMERCIAL SHEARING & STAMPING COMPANY

YOUNGSTOWN, OHIO

▲ Mention Item NED-1079 when writing ▲

Improved INVINCIBLE Vacuum Cleaner

6 Ways Better, *yet* Lower in Cost!



Improved 5 H. P. Invincible Vacuum Cleaner.

1. GREATER EFFICIENCY due to a redesigned Vacuum Producer.
2. LIGHTER, MORE COMPACT—Vacuum Producer attached directly to dust tank, eliminating unnecessary connections and castings. New motor mounting lowers center of gravity.
3. DIRT CONTAINER 50% LARGER—fewer stops for emptying.
4. INCREASED ACCESSIBILITY—Filter unit is easier to agitate.
5. SIMPLIFIED OPERATION—Redesigned bucket lift is more convenient.
6. HIGHER PERFORMANCE—Vacuum stepped up from 76" to 83".

Yet, this Invincible Vacuum Cleaner is *LOWER IN COST* than the old model. Write for complete information.

INVINCIBLE VACUUM CLEANER MFG. CO.

DOVER, OHIO

▲ Mention Item NED-1080 when writing ▲

LABORATORY OVEN

Designed for use in chemical laboratories doing precipitation, ash content and similar general chemical laboratory work, model 5700 electric oven features thermostatically controlled temperatures from 0 to 550 F with added timing device which maintains temperature for various periods of time. Even distribution of heat is accomplished by two large vents located on either side at top of oven. These vents serve not only to equalize heat, but also to remove unwanted fumes and gases.

Interior of oven is lined with steel and has baked aluminum surface. Stainless steel and baked aluminum interior is available for special uses. Interior dimensions are 20 x 15 x 19 inches. Oven consumes 2800 watts at 110 or 220 volts single phase. Door latches are explosionproof. Standard equipment includes two expanded metal trays and built-in pilot light. Made by **K. H. Huppert Co.**, 6838 Cottage Grove Ave., Chicago 37, Ill.

▲ Mention Item NED-1081 when writing ▲

SOLUBLE CUTTING OIL

Increased tool life and reduced down time for tool changes are said to result when Gulf soluble cutting oil is used. Oil combines all-water miscibility with qualities of lubricating, stability, pleasant odor, nonfoaming, and rust preventive characteristics. Recommendations for proper dilution for specific machining operations are available from manufacturer. Made by **Gulf Oil Corp.**, 2739 Gulf Bldg., Pittsburgh, Pa.

▲ Mention Item NED-1082 when writing ▲

FLAW DETECTING MACHINE

Capable of continuously detecting and counting holes, weak spots and conducting paths in thin materials such as paper, sheet rubber, mica, varnished cloth, plastic and wire, this flaw detecting machine can be applied to sheet materials up to 0.025-inch thick moving as fast as 450 feet per minute. Wire can be handled when traveling at speeds up to 100 feet per minute. Detector can be made to sound alarm, operate recorder or shut down manufacturing process when flaws are encountered. Remotely mounted, control unit will indicate flaws by flashing indicating light.

Unit consists of an electrode assembly through which an adjustable voltage is applied to material undergoing test and an electronic circuit which indicates flow of current through material which occurs when flaw passes under electrode. Made by **General Electric Co.**, Special Products Div., Schenectady 5, N. Y.

▲ Mention Item NED-1083 when writing ▲

▲ Mention Item NED-1084 when writing ▲

SPEEDY AIR VISE

SPEEDS UP ✓ MILLING ✓ PUNCHING ✓ DRILLING ✓ BENDING ✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and *Fittings*.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 5720 Armitage Ave. • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

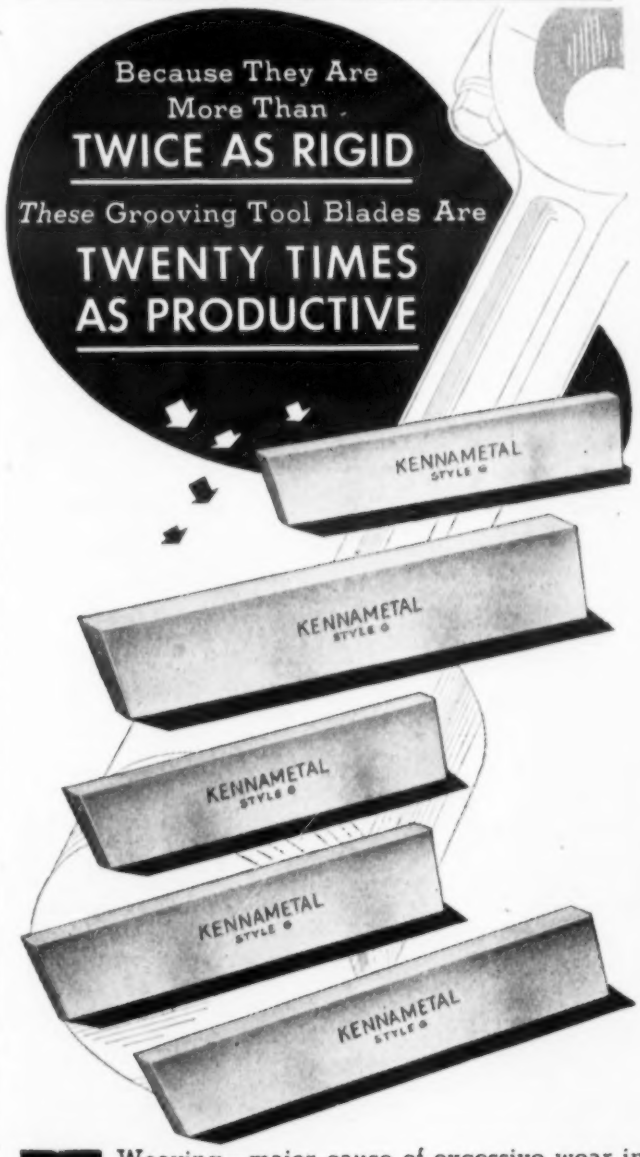
▲ Mention Item NED-1085 when writing ▲

Because They Are More Than

TWICE AS RIGID

These Grooving Tool Blades Are

TWENTY TIMES AS PRODUCTIVE



Weaving—major cause of excessive wear in slender grooving tool blades—can now be overcome by using sturdy, hard blades of solid Kennametal. Here's one example—

In a large automobile plant, solid Kennametal blades are now cutting piston ring grooves in 18,000 to 20,000 aluminum alloy pistons before resharpening, whereas the previously-used carbide-tipped steel-shank tools had to be serviced after cutting grooves in 800 pistons.

These new solid Kennametal blades cut better, longer, not simply because they are much *harder* than steel, *but primarily because their resistance to deflection is two to three times* as great as steel. Weaving that causes erratic cutting pressures, strains, and rapid cutting edge failure is thereby minimized.

Kennametal grooving tool blades are made in standard widths from .080" to .250". Other sizes are available. Ask our nearest representative, or write for prices and particulars.

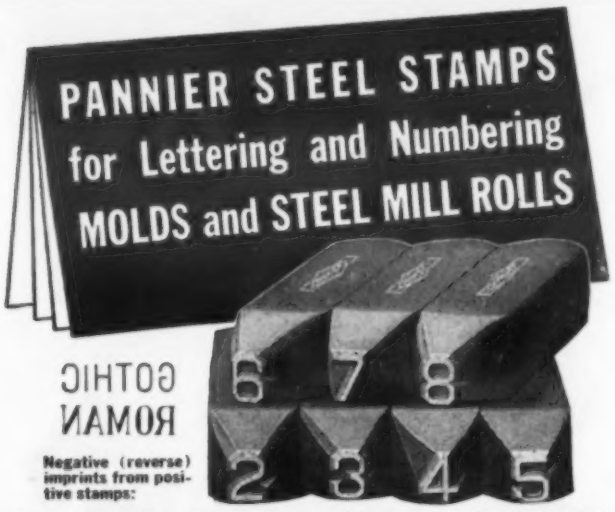
KENNAMETAL

SUPERIOR CEMENTED CARBIDES

KENNAMETAL *Inc.*, LATROBE, PA.

▲ Mention Item NED-1086 when writing ▲

PANNIER STEEL STAMPS for Lettering and Numbering MOLDS and STEEL MILL ROLLS



Negative (reverse) imprints from positive stamps:

Pannier Positive-Character Stamps are used for lettering and numbering steel mill rolls and molds from which metal, plastic, rubber and glass products are made. Because the imprint must be negative, the character on the face of the stamp reads from left to right. Available in various character sizes and type styles. Special trademarks and designs also can be made. Light, heavy or extra-heavy bevels to suit job requirements. Finest quality tool steel and painstaking engraving insure a long life of good impressions. Write for recommendations.

Steel Stamps and Dies; Embossing Equipment; Metal Tags; Stencils; Rubber Type, Stamps, Dies; Marking Inks

MASTER PANNIER

PANNIER BROS. STAMP CO.
207-209 SANDUSKY ST.
PITTSBURGH 12, PA.

▲ Mention Item NED-1087 when writing ▲

in SAO PAULO, BRAZIL
WISCONSIN HEAVY-DUTY Air-Cooled ENGINE renders "Assist" on Sewer Project

Whether operating a Carver Model KN2L pump, discharging water from an excavation for a city sewer installation in Sao Paulo, Brazil, or operating a concrete mixer in Kalamazoo, Mich., or handling any one of hundreds of outdoor jobs on a great variety of equipment . . . you can always depend on Wisconsin Heavy-Duty Air-Cooled Engines for on-the-job serviceability.

Compact in design, extremely light in weight, but designed and built for heavy-duty service in every detail . . . Wisconsin Engines are giving good accounts of themselves in all branches of industry, in many fields. These engines are built to fit the machine and the job . . . on any power application within a 2 to 30 hp. range, for all-weather service in any climate, anywhere.

Specify "Wisconsin Air-Cooled Engines" for your equipment.

WISCONSIN MOTOR Corporation
MILWAUKEE 14, WISCONSIN
WORLD'S LARGEST BUILDERS OF HEAVY-DUTY AIR-COOLED ENGINES

▲ Mention Item NED-1088 when writing ▲

DESIGN with SUPERIOR SMALL TUBING (Maximum 5/8" OD)

SEAMLESS and WELDRAWN*

Stainless Steels—Alloy Steels
Carbon Steels—Nickel & Inconel
Monel—Beryllium Copper

An almost endless list of combinations of properties are available to you in the above metals in their many analyses.

Choosing the *one right* analysis for your product depends upon combinations of such properties as corrosion resistance, formability, machinability, high strength at high temperatures, surface finish and tolerances.

Our ability to predict the results to be experienced with any given analysis, is your assurance of enduring, faultless performance in production and end use.

Write today for Bulletin No. 33.

*U. S. Trademark

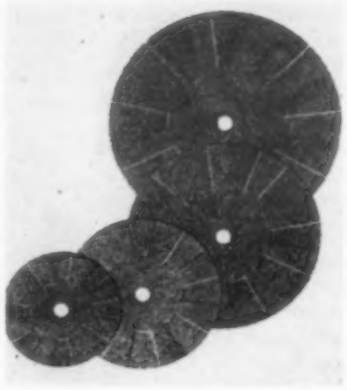
See our CATALOG in SWEET'S FILE for PRODUCT DESIGNERS

THE BIGGER NAME IN SMALL TUBING Superior

SUPERIOR TUBE COMPANY
Norristown, Pennsylvania

▲ Mention Item NED-1089 when writing ▲

CUT-OFF WHEELS



Employing principle similar to that of ripsaw blade for woodworking, Ripper abrasive cut-off wheel has "set" which permits rapid, cool cutting of metal. Sides of wheel are made with radial depression 0.006 to 0.008-inch deep, extending from flange area to edge of wheel. Minimum thickness of wheel is 1/16-inch in 6-inch size and 3/32-inch in 8, 10 and 12-inch sizes. Wheels can be used on either portable or cut-off machines for cutting all hard materials. All "American" grits and grades are available. Made by **American Emery Wheel Works**, 12 Richmond Sq., Providence 1, R. I.

▲ Mention Item NED-1090 when writing ▲

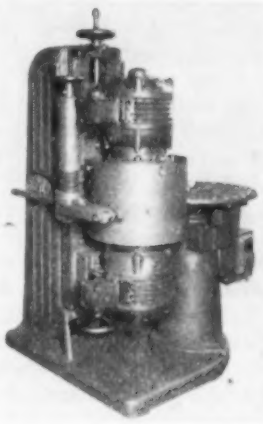
STEP DOWN TRANSFORMER

Capable of stepping 220 volts down to 110 volts, this Gulow step down transformer is available in 100, 250, 500, 750 and 1000-watt sizes. Both open and enclosed models are available. Illustrated model is completely enclosed in steel case and potted in compound to keep out moisture. It is intended for use as separate unit and is furnished with 6-foot cord, plug and receptacle.

Open frame constructed model has angle iron brackets for mounting feet and is designed for use as integral part of an electrical device. It is supplied with flexible leads. Special sizes of transformers are available to meet specific requirements. Made by **Gulow Corp.**, 99 Park Pl., New York 7, N. Y.

▲ Mention Item NED-1091 when writing ▲

VERTICAL SPINDLE GRINDER



Capable of grinding from 3000 to 4000 small coil springs or other parts per hour, this 12-inch model No. 902 double vertical spindle grinder has horizontal feed which enables operator to drop small parts into feed wheel rapidly and accurately. Machine will grind steel rollers, carbon brushes, washers, ceramic parts and wide variety of other small pieces within allowable tolerances. Unit is direct drive and is claimed to effect substantial savings in time and to reduce operator fatigue. Made by **Charles H. Besly & Co.**, Engineering Dept. 1, 118-124 N. Clinton St., Chicago 6, Ill.

▲ Mention Item NED-1092 when writing ▲

Every job a NEW IDEA

● A simple air operated device raises racks from one level to another without transfer from American MonoRail track. Application of such devices occur in nearly every American MonoRail System, each fitted to meet individual handling needs.

Write for Bulletin C-1 showing hundreds of successful jobs.

THE AMERICAN MONORAIL COMPANY
13116 ATHENS AVE. ● CLEVELAND 7, OHIO

▲ Mention Item NED-1093 when writing ▲

VEMCO DRAFTING MACHINES

For Faster, More Accurate Work

Effortless movement . . . positive setting and control . . . flexibility . . . elimination of an awkward assortment of drafting tools — these are a few of the many important advantages of VEMCO drafting machines. They increase drafting room capacity as much as 40% and improve accuracy without wasted effort!

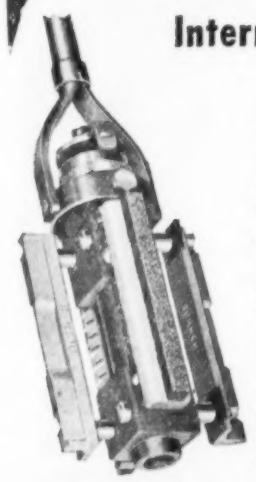
Only VEMCO drafting machines give you *all these features:*
- Simple tightening device produces proper band tension.
- Convenient, thumb-action indexing for each 15° in entire circle.
- Exclusive articulated arms permit raising drafting head without special hinge; moreover, permits scales to be flat.
- Positive scale holder firmly holds any standard scale, yet permits instant removal.

Ask your VEMCO distributor for a demonstration, or write us for catalog of VEMCO drafting machines and drawing instruments.

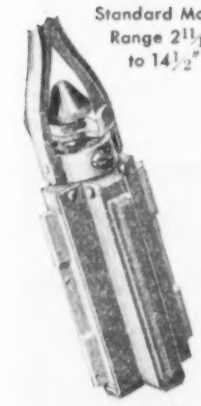
V. & E. MANUFACTURING CO.
PASADENA 20, CALIF.

▲ Mention Item NED-1094 when writing ▲

In Cylinders from 2" to 14½" in Diameter SUNNEN Portable Cylinder Hones Provide Smooth Accurate Internal Finishes



Standard Model Range 2 11/16" to 14½"



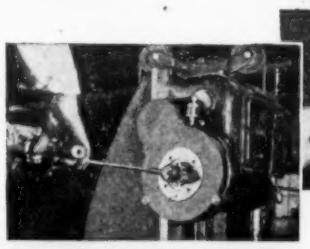
Junior Model Range 2" to 2.6"

These hones provide a fast, easy, practical, economical way to produce internal finishes that are guaranteed to be accurate within .0005". Straight round holes are produced without disturbing previously established alignment. Sunnen Portable Cylinder Hones produce any commercially required finish with full bearing surface. They correct errors of out-of-round, taper, bell-mouth, wavy condition, distortion — and remove tool marks or other surface imperfections.

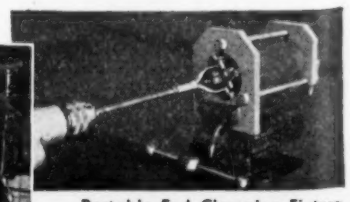
With Sunnen Portable Cylinder Hones stock removal is fast. They are portable, can easily be taken to the job. Free floating universal joint permits operating at an angle. Adjustment is simple, easy and positive. Easy to use, can be set up for operation in one minute. Handles any metal or plastic except lead and babbitt.

Sunnen Portable Cylinder Hones are ideal for *Selective Fitting of Mating Parts — Small Lot or Odd Size Production — Salvage and Production Repairs — Maintenance of Operating Equipment.*

If you have an internal finishing problem, call a Sunnen Engineer—or write for free bulletin, form No. X-AN5001.



Sunnen Portable Cylinder Hone saved dismantling this machine to install a new boring bar.



Portable End Clamping Fixture enables part to be honed accurately without distortion.

SUNNEN

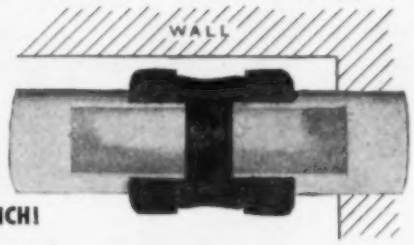
SUNNEN PRODUCTS COMPANY
7931 Manchester Avenue • St. Louis 17, Missouri
Canadian Factory: Chatham, Ontario 182

▲ Mention Item NED-1095 when writing ▲

SAVE TIME AND MONEY IN CLOSE-QUARTER PIPE JOINING

with DRESSER FITTINGS

- NO THREADING
- NO ACCURATE ALIGNMENT
- THE ONLY TOOL
- ...A SIMPLE WRENCH!



Style 65—Available in all standard sizes and shapes.

For complicated "close-quarter" piping connections—on pumps, and other equipment. Easy leak-proof assembly is assured. No "exact" pipe alignment—"cut-in" a matter of minutes. Dresser gasket forms lifetime seal, and absorbs vibration. Ask your jobber or write: ***Dresser Manufacturing Division, 625 Fisher Ave., Bradford, Pa.***

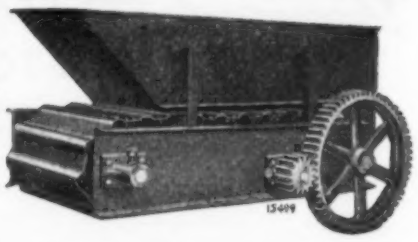
DRESSER NO-THREAD FITTINGS

ONE OF THE DRESSER INDUSTRIES

▲ Mention Item NED-1096 when writing ▲

MECHANICAL FEEDERS

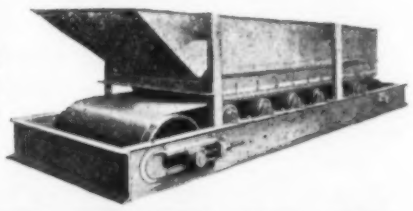
STEEL APRON TYPE
For heavy duty handling of lump coal, stone, ores and materials exerting heavy impact and extensive wear.



RECIPROCATING PLATE TYPE
For handling materials not excessively abrasive such as coal which do not cause undue wear on sliding plate.

BELT TYPE
For feeding fine abrasive or lump material not exceeding 2-1/2". May be equipped with magnetic head pulleys to serve as separators.

Send for Catalog 791



JEFFREY
ESTABLISHED 1877
952-99 N. Fourth St., Columbus 16, Ohio

▲ Mention Item NED-1097 when writing ▲

NEW LIFTING EQUIPMENT

Uses Economical Oildraulic Power

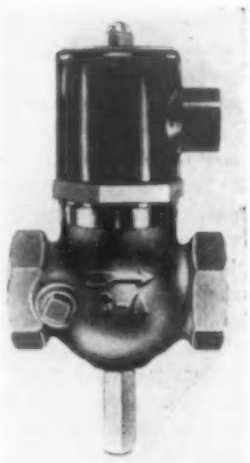
Use Oildraulic power to lift loads directly from plant floor to trucks, freight cars or different building levels. Rotary Levelators speed plant traffic, conserve manpower, cut costs. Save plant space, too . . . no need for ramps. Plant floor can be poured at grade. Safe, dependable, economical. Installation simple and inexpensive. For complete data, write for Catalog RE-201

Rotary LEVELATORS

ROTARY LIFT CO.
1014 Kansas
Memphis (2), Tenn.

▲ Mention Item NED-1098 when writing ▲

MAGNETIC GAS VALVE



Designed to control flow of natural or manufactured gas in domestic heating systems, conversion gas burners, water heaters and other gas fired units, model No. SG 1 magnetic gas valve can be used with any two-wire snap action room thermostat. Valve is easily installed in vertical position in horizontal gas line between gas supply valve and burners. Arrow, on side of valve, indicates direction of gas flow. Conduit opening of 1/2-inch is provided to permit installation of BX or conduit if desired. In case of prolonged power failure, provision is made for manual operation. Made by **Gleason Avery, Inc., Auburn, N. Y.**

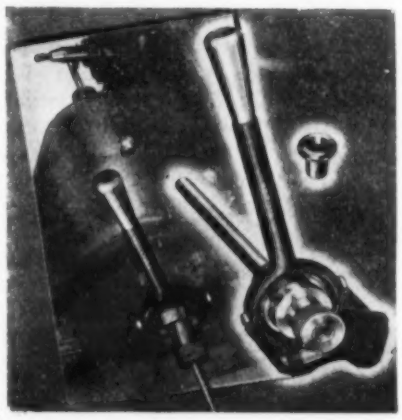
▲ Mention Item NED-1099 when writing ▲

TELEPHONE INDEX

Attachable to any telephone, this Tel-Eze plastic telephone card index file serves as time saver in providing quick ready reference material. Unit looks like part of telephone. Cards can be removed easily for typing and refills are obtainable. Index file holds pencil also. Illustrated model S unit retails at $1.50. Made by **Le Shore Corp.**, 47-30 Vernon Blvd., Long Island City 1, N. Y.

▲ Mention Item NED-1100 when writing ▲

LEVER-TYPE DRAWBAR



Employing patented co-ordinate cam principle which reduces friction to minimum and eliminates need for fingers, precision lever-type drawbar is designed for production use on ½-inch collet capacity lathes. It is provided with three positions of tension adjustment. Positive gripping tension is applied over range of three adjustments, automatically adapting itself to diameter of stock being handled. Undersize, standard and oversize stock can be handled without taking unit apart. Attachment is rigid and there is no chatter at highest speed. High leverage reduces operator fatigue. Made by **General Die & Stamping Co.**, 270F Mott St., New York 12, N. Y.

▲ Mention Item NED-1101 when writing ▲

The FLEX V TRADE-MARK

Belt Fastener for A and B Belts of open end construction

Size No. A180 for A Belts
Size No. B214 for B Belts

Flex V fasteners are made in two sizes for joining A and B V-belts of special open-end cross-woven fabric construction and on drives rated as light duty with a belt speed of not over 3000 feet per minute. The fasteners must not be used on heavy duty or high speed drives or for joining or repairing V-belts that were originally endless.

Flex V fasteners are easy to apply with the special applicator tool. The separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. Flex V fastened V-belts can also be run on V Flat Drives for there is no metal on the under side of the belt to contact the flat faced pulley.

Folder No. V-12 gives complete details on this Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

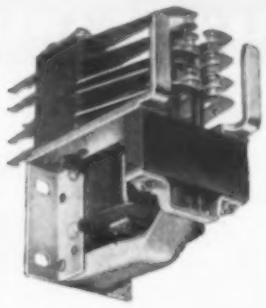
Order from your supply house

FLEXIBLE STEEL LACING CO.
4664 LEXINGTON ST., CHICAGO 44, ILLINOIS

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

▲ Mention Item NED-1102 when writing ▲

A PROVED Relay for NEW uses



Originally developed for our Vehicle-Actuated Traffic Control Systems, the AC2 relay is now generally available. Fast-acting, compact, built to handle up to ten million operations a year. Clean operation of as many as ten sets of contacts on each relay, with circuit closure of as little as .010 seconds, is provided for on this precision instrument.

Even where insulation resistance in excess of 300 megohms is required after long service, the AC2 relay assures it through a method of encasing each individual contact spring in phenolic insulation.

All connections, including coil connections, at rear make the AC2 well adapted to vertical rack mounting. Drilled with four mounting holes for No. 8 screws. Centers 1 5/16" horizontal x 13/16" vertical.

Coils for 115 volts, 60 cycles, and 12 volts, 60 cycles, and pure silver contacts 5/32" diameter (rated 5 amps. 115V AC non-inductive) and 7/32" diameter (rated 10 amps. 115V AC non-inductive) are standard. Other contacts and coils can be supplied on special order.

Overall width 1¾". Relay extends 2 7/16" forward and 9/16" backward from mounting surface. Overall height 2¾" from bottom of armature to top of vertical contact guards. This height will accommodate 4 average contact assemblies, 2 in each pileup. Each additional contact assembly adds approximately ¼" to the overall height.

Our Engineering Department can be of valuable assistance to you in adapting this relay to your present products or your new designs. Write us your problems and requirements.

AUTOMATIC SIGNAL DIVISION
Eastern Industries, Incorporated
130 Regent Street
East Norwalk, Connecticut

▲ Mention Item NED-1103 when writing ▲

For more than 30 years, K-G Welding and Cutting Company has manufactured welding and cutting torches and regulators with a single purpose in mind—to produce only the finest possible oxy-acetylene apparatus. That this aim has been achieved is demonstrated by the fact that with few distributors and little sales effort, K-G apparatus is in use far and wide. K-G torches and regulators have literally sold themselves . . . have proved so efficient and economical that many users have ordered and re-ordered *by mail* for many years.

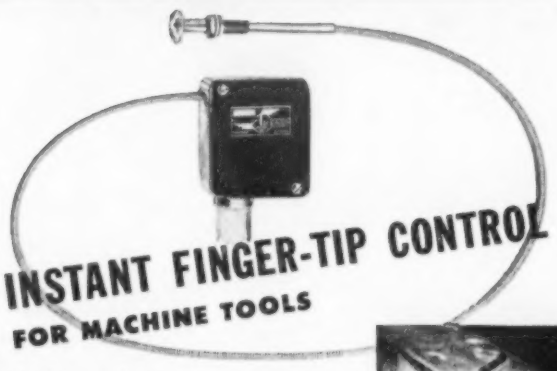
Now, as a subsidiary of Air Products, Incorporated, K-G is putting into operation an entirely new and broader sales policy designed to make the K-G line available everywhere for direct purchase. New items are being added to provide a complete line of superior equipment for every welding and cutting requirement. Soon there will be authorized K-G distributors, with complete stocks and factory-trained repair experts, in all principal cities. In the meantime, users of apparatus are invited to learn more about the superior K-G line. Write today for the K-G Catalog—address K-G Welding and Cutting Company, Dept 240, 515-19 W. 29th Street, New York 1, N. Y.

TO USERS OF OXYGEN: Air Products, Incorporated, manufacture equipment for the economical production of oxygen, nitrogen and hydrogen by the user of more than 200,000 cubic feet per month. Learn how you can cut costs and speed production by producing your own gases with Air Products equipment—write for details. Address Air Products, Incorporated, Dept. G, Box 538, Allentown, Pa.

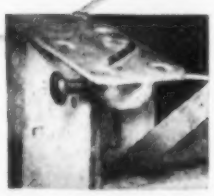
A SUBSIDIARY OF
Air Products
INCORPORATED

▲ Mention Item NED-1104 when writing ▲

REMOTE SWITCH CONTROL



INSTANT FINGER-TIP CONTROL
FOR MACHINE TOOLS



Here's the new low-cost Arens Remote Switch Control which provides instant starting and stopping for machine tools without rewiring. It also reduces machine tool installation costs and provides greater safety.

The control head may be quickly mounted on the machine at the point most convenient for the operator. The flexible cable can then be carried to the switch box which may be located either adjacent to the motor or convenient to present wiring or junction box.

If desired the control head may be mounted so the operator with body pressure against the switch button can turn the machine off.

Write for Bulletin No. 11 Today

Many Models Available
Standard Models (such as the installation above) as well as special units are available for any type of machine tool operation. This control is also particularly economical for installation on multiple units.

ARENS CONTROLS, INC.
2256 South Halsted Street • Chicago 8, Illinois

▲ Mention Item NED-1107 when writing ▲

AIR CYLINDER

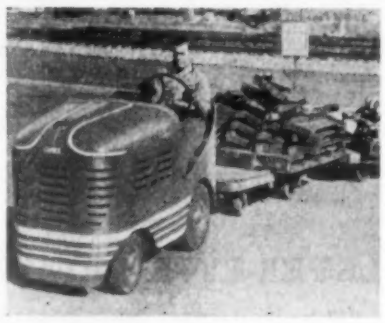
Employing threaded cylinder caps, Modernair non-cushion type air cylinders require no tie rods. Cylinder caps are fabricated from cast aluminum alloy which is heat treated to produce high tensile strength and pressure resistance. Saving of installation space is possible by elimination of tie rods and by design of end caps which permits use of numerous types of mounting brackets, alone or in combination. Brackets are available for end plate, foot bracket and swivel mounting and all are interchangeable.

Caps can be rotated 360 degrees on cylinder without affecting permanence of seal. This simplifies installation plumbing by elimination in many cases of need for elbow or T-fitting in connecting line into or from cylinder. Pressure and volume losses because of fitting restrictions are thereby reduced.

Aircraft type O-ring packings are employed at all points of wear or possible leakage to eliminate all metal-to-metal contact. Units are available in standard range of 2, 2½, 3 and 4-inch diameters with optional stroke lengths. Cylinders are fabricated of seamless brass cylinder stock for corrosion resistance. Air, water or oil actuation can be employed. Made by **Modernair Corp.**, 4222 Hollis St., Oakland 8, Calif.

▲ Mention Item NED-1109 when writing ▲

TOWING TRACTOR



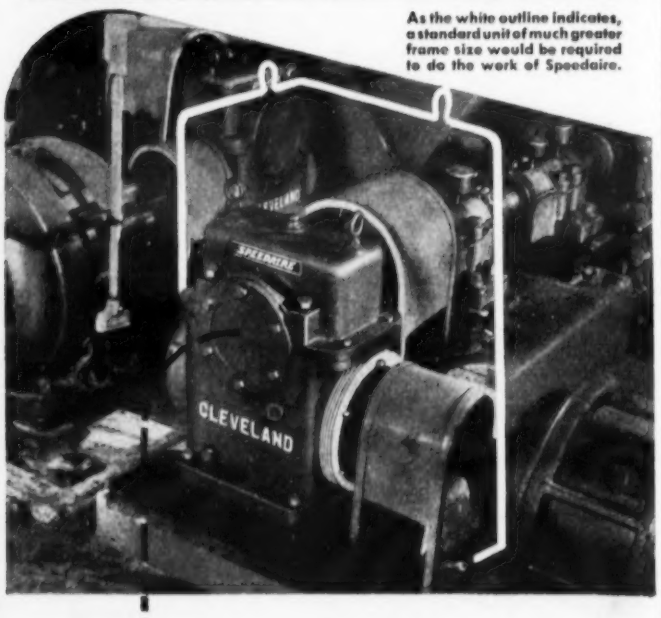
Improvements on this Clarkat towing tractor include wide steering axle for increased stability and flattened nose for pushing loads. Units are available with either pneumatic or solid tires front and rear. Tractors have center pivoted suspension of steering axle and center control type steering gear operated through worm and gear sector. Accessibility to motor and drive units has been improved. Standard automotive type transmission provides three speeds forward and one reverse. Water pump is integral part of engine cooling system and mechanical governor provides close control of speeds. Made by Clark Tructractor Div., **Clark Equipment Co.**, 1952 Arze St., Battle Creek, Mich.

▲ Mention Item NED-1110 when writing ▲

FOGPROOFING CLOTH

Available in three distinct types for fogproofing eyeglasses, face shields and automobile windshields, Clearsite impregnated cloth does not leave messy or sticky substances on hands. It is applied by wiping cloth on inside surface of glass. Clearsite Nos. 100, 200 and 300 are to be applied to glasses, face shields and windshields respectively. Cloth can be carried in car or kept in drawer of work bench. Sample orders of product will be filled at $1 each, postpaid to any address. Made by **Clearsite Laboratories**, Dept. C-6, 6100 Butler St., Pittsburgh 1, Pa.

▲ Mention Item NED-1111 when writing ▲



As the white outline indicates, a standard unit of much greater frame size would be required to do the work of Speedaire.

SPEEDAIRE twins save space, reduce weight, cut cost $385

THESE two Speedaires are installed in the northern New York mill of a well-known paper company. The reducer in the foreground drives a paddle wheel circulating hot-pond water; the other drives a chain conveyor bringing rough wood into the hot pond.

In operation over a year, the Speedaires are completely satisfactory. As is apparent from this photograph, they saved valuable space, permitting motors and drives to be grouped more closely. Load on the floor was reduced 1300 pounds (Speedaire's weight is less than half that of a conventional worm-gear reducer) and cost saving was $192.50 per unit.

Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to *double the horsepower* of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

For full description, send for Catalog 300. The Cleveland Worm & Gear Company, 3283 East 80th Street, Cleveland 4, Ohio.

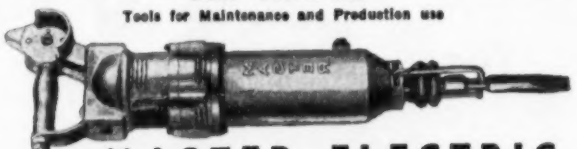
Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

CLEVELAND
Worm Gear
Speed Reducers

▲ Mention Item NED-1108 when writing ▲

—CLIP THIS AD—

Tools for Maintenance and Production use



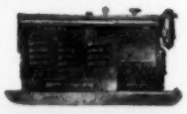
MASTER ELECTRIC
"POWER BLOW" HAMMER
For drilling, tamping, chipping, scaling, caulking, peening, etc. Takes tools from ¼" to 2 diameter.

MASTER GRINDERS
Electric "Plug-In" or Engine-Driven
For grinding, finishing, smoothing, grouting, sanding, brushing, buffing, polishing, etc.

TAMPERS
Electric "Plug-In" or Engine-Driven
Power-packed Tamper for tamping earth, backfills, gravel, slag, asphalt, mastic, compounds, sod, etc. For cutting and patching asphalt, blacktop, mastic floors, pavements.

MASTER ELECTRIC GENERATOR PLANTS

From ½ to 17 KW (18.7 KVA). Gasoline or Diesel Fuel. D.C., A.C. Single or three-phase. Power plant, standby or emergency units.



MASTER
THE MASTER ELECTRIC CO.
INDUSTRIAL EQUIPMENT DIV., DAYTON, OHIO
Machine Drives • Electric Hoists • Electric Hammers • Engine Driven Generator Plants • Portable Grinders • Big 3 (Power, Tool Operation, Concrete Vibration) Units • Tampers

▲ Mention Item NED-1112 when writing ▲

VARIACS

FOR VOLTAGE CONTROL

THE VARIAC . . . the original continuously-adjustable autotransformer . . . is the ideal means for varying the voltage applied to any alternating-current operated device. VARIACS provide absolutely smooth, stepless a-c voltage variation from ZERO to 15% above-line-voltage. VARIACS can be used either for table or behind-the-panel mounting. They are correctly designed and ruggedly constructed to give years of useful, trouble-free service. If you have any a-c voltage control problem, probably the VARIAC can give the answer.

WRITE FOR INFORMATION
GENERAL RADIO CO.
Cambridge 39, Massachusetts
NEW YORK CHICAGO LOS ANGELES

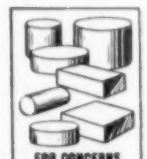
▲ Mention Item NED-1113 when writing ▲

Immediate Delivery
FROM STOCK
GREAVES-SILENT BAKELITE GEARS

No waiting when you order Greaves Silent Bakelite Gears. • We have them in stock NOW! • Your order will go forward immediately. • You'll appreciate the silent operation and added smoothness provided by Greaves Silent Bakelite Gears. • You'll marvel at their great strength to carry big power loads . . . their remarkable ability to successfully operate completely submerged in water. • You'll welcome their low cost. • No metal reinforcements required. • Save Time . . . Money . . . Labor!

We also make silent gears of rawhide and Fabriol.

Write for Circular.



FOR CONCERNS CUTTING THEIR OWN GEARS, WE CAN MAKE IMMEDIATE DELIVERY ON BLANKS SAWED TO SPECIFIED DIAMETER AND FACE

THE *Greaves* MACHINE TOOL CO.
2009-35 EASTERN AVENUE
CINCINNATI, OHIO

▲ Mention Item NED-1114 when writing ▲

TIME *Electro* ~~HIGH SPEED~~
CUT-OFF WHEELS
Against Anything

Wafer thin amazingly strong, "Electro" Cut-Off Wheels reduce cutting time from minutes to seconds; and make a further labor-saving time-gain by finishing cut faces as they whiz though wet or dry, hard or soft, heavy or light ferrous and non-ferrous metals, ceramic materials and such. They're the safest known, truest and best balanced.

Service from Los Angeles or Buffalo

SEND for details and a copy of our new 4-color Catalog Manual No. 645.

Electro SINCE 1919

Electro REFRACTORIES & ALLOY CORPORATION
Mfrs • Grinding Wheels • Crucibles • Alloys • Refractories
344 DELAWARE AVENUE BUFFALO 2, NEW YORK

▲ Mention Item NED-1115 when writing ▲

TORRINGTON SPHERICAL ROLLER BEARINGS

Free-rolling self-alignment, high radial capacity, two-directional thrust capacity and unit construction for easy handling and assembly are featured in Torrington Self-Aligning Spherical Roller Bearings. Write for Bulletin No. 206.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.
Offices in all principal cities

NEEDLE
SPHERICAL ROLLER
TAPERED ROLLER
STRAIGHT ROLLER
BALL

TORRINGTON BEARINGS

▲ Mention Item NED-1116 when writing ▲

IT DOES THE JOB OF SOLID SILVER

Yet It's Yours at Low Cost...

You needn't worry about today's high silver costs because you can use General Plate Laminated Silver Metals and get solid silver performance *at a fraction of the price of solid silver.* Among the advantages of General Plate Laminated Metals, you get better electrical conductivity, high corrosion resistance, workability, ease of fabrication, better spring properties, long wearing life and structural and mechanical properties not obtainable with single solid precious metals. General Plate Laminated Metals are available in sheet, wire and tube form. Wire for information.

GENERAL PLATE DIVISION
of Metals and Controls Corporation
ATTLEBORO, MASSACHUSETTS

▲ Mention Item NED-1117 when writing ▲

STENCILS

FOR MANY USES IN PLANT, OFFICE AND SHIPPING ROOM

Bold, legible stencil marked parts, bins, files, desks, doors, etc. make instant identification and location easy. In shipping departments it speeds addressing, marks shipments permanently, legibly for fast, safe handling and delivery. For further information on uses of stencils, samples, Shipper's Handbook, prices, pin this ad to business letterhead with your name.

MARSH STENCIL MACHINE CO., 23 MARSH BLDG., BELLEVILLE, ILL., U. S. A

MARSH STENCIL MARKING

▲ Mention Item NED-1118 when writing ▲

FILTER PRESS

Alkyd resins, paints, varnishes, oils, cutting oils and coolants can be filtered with this vertical stack filter press. Combination construction of plate and frame provides for quick and easy cleaning and removal of cakes through individual frame latching arrangement. Starting with top of frame, each section is individually latched in elevated position to permit filter paper and cake to be pulled forward out of press. Filtering area is 31 square feet with 2 cubic feet of cake space. Filter press will handle, in addition to liquids already listed, solvents, molasses, honey, fruit syrups, soaps, liquid shampoos, shaving lotions, fish, linseed, castor and essential oils. Made by **Youngstown Miller Co.**, 675 Main St., Belleville 9, N. J.

▲ Mention Item NED-1119 when writing ▲

LOW TEMPERATURE SOLDER

Facilitating wide range of soldering applications for aluminum work, All-State No. 39 low temperature rub-on aluminum solder has good matching color and fair resistance to corrosion. It is recommended for filling and soldering where tightness is essential but strength unimportant. It can be used to repair blowholes, build up worn surfaces on aluminum castings, salvage and make changes on foundry patterns and for repair of cracks in aluminum cylinder heads. Made by **All-State Welding Alloys Co.**, 96 W. Post Rd., White Plains, N. Y.

▲ Mention Item NED-1120 when writing ▲

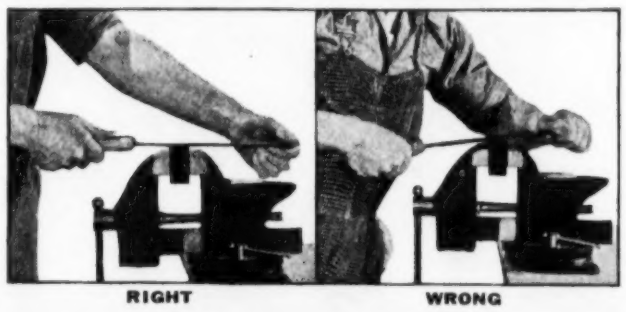
ARC WELDING UNIT

Equipped with arc booster that augments current the instant arc is struck, this Fleet-Arc alternating current welding unit features welding ease, depth of penetration, wide range of output, economy, safety and long service life. In operation, arc is started the moment electrode touches work. Selector switch on front of welder governs amount of booster current to be used in striking arc. Current control, continuous and self-adjusting, is provided by rotating reactor control that is held in position by cone brakes.

Separate power transformer and adjustable reactor control enable unit to duplicate wide range of output of direct current welders. High power factor, reduction of condenser requirements and less shock to operator are gained through lower open circuit voltage. Units are available in 200, 300 and 500 amperage ranges. Made by **Lincoln Electric Co.**, Dept. AP-574, Cleveland 1, O.

▲ Mention Item NED-1121 when writing ▲

POP'S School of Filing



YES, Pop the Foreman is back. His peacetime "School of Filing" is open to industrial employees, bosses, trainees—anyone. Here's the first "quiz." Pass it around. Correct answers can be found in the Nicholson "text book," *FILE FILOSOPHY*. It's *free* . . . send for your copy today.

(Parentheses indicate pages of FILE FILOSOPHY containing correct answers)

1. What things is the mechanic in the "Wrong" picture doing incorrectly? (p. 30)
2. What three important things must filer do right to do a good job? (p. 23)
3. In what three elemental ways can file be put to work manually? (pp. 28-29)
4. What is proper height for work in vise for (a) general filing; (b) heavy filing; (c) delicate filing? (p. 29)
5. What accessories should be used for holding soft metals in vise for filing? (p. 29)
6. What is best way of holding file for ordinary filing? (p. 29)
7. What is proper way of "carrying" file across work? (pp. 29-30)
8. What is drawfiling and how should file be held and "carried"? (pp. 30-31)
9. How should file be held against work in lathe filing? (p. 31)
10. What special file is made for lathe filing and what are its features? (p. 31)

NICHOLSON U.S.A.

NICHOLSON FILE CO., 34 ACORN ST.
PROVIDENCE 1, R. I.
(In Canada, Port Hope, Ont.)

BLACK DIAMOND TRADE MARK

NICHOLSON FILES *FOR EVERY PURPOSE*

▲ Mention Item NED-1122 when writing ▲

...when you use AMERICAN PHILLIPS SCREWS

IN PRODUCTION: Top-rank stove builders rate the modern method of American Phillips Screw-driving as a major means of cost-control. For American Phillips Screws save in many ways: Fumble-proof starts, automatically straight driving, no burred screwheads or spoiled work, faster assembly . . . and more finished goods on the shipping platform *every day. Sum of all time-savings runs as high as 50%.*

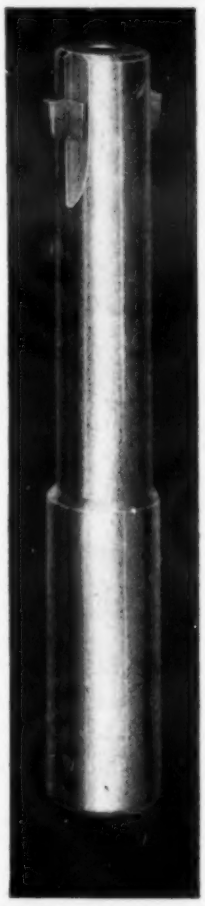
IN SALES PROMOTION: American Phillips Screws give *any* product a smartly finished, modern look that packs plenty of appeal to purchasers. And there are no snags to catch hose or clothes. So American Phillips Screws pay off double . . . in the plant and on the sales-floor.

AMERICAN SCREW COMPANY, PROVIDENCE 1, RHODE ISLAND
Chicago 11: 549 E. Illinois Street *Detroit 2:* 502 Stephenson Building

AMERICAN PHILLIPS *Screws*

▲ Mention Item NED-1123 when writing ▲

THIS NEW MADISON ROUGH BORING TOOL SLASHES HOLE COSTS!



This new Madison Rough Boring Tool is the fastest changing, fastest cutting boring tool made. Team it with the Madison Reaming Cutter for accurate, finely finished, low cost holes. Like Madison Reamers, the Roughing Cutter is easily set to decimal sizes within its range. Because cutters may be presized, disturbance of the setup is unnecessary when inserting a ne wor sharpened cutter in the bar.

The Madison locating feature automatically centers cutter in the bar, equalizing the load on cutting elements.

The cutter block is formed by the Madison cutting blades themselves. This exclusive Madison feature creates a more rugged cutter with no delicate mechanisms or separate parts. Madison Roughers have been used to bore holes as large as 17.590 and are made in the smaller range to 1" size.

These exclusive Madison features of simplified design are the reasons why the new Madison Rough Boring Tool performs with amazing speed. On field tests, stock removal requiring three passes with a conventional single point tool was executed in one pass with this new Madison Rougher.

Write for the Madison catalog today. Get the facts on Madison Boreamers, the tools that make one operation out of boring and super finish reaming.

MADISON
MANUFACTURING COMPANY
DEPT. ED-5 MUSKEGON, MICHIGAN

▲ Mention Item NED-1124 when writing ▲

A Complete LEAD HAMMER *Service...*

NEW COOK SHUR-GRIP HAMMER HANDLES
Specially designed drop-forge handle for 3, 4, 5 and 6 lb. COOK LEAD HAMMERS. Handle will not slip.

COOK PRODUCTION HAMMER MOLD
3 HAMMERS AT ONCE • Easy to operate. Made expressly for COOK HANDLES

COOK MOLD AND LADLE
Makes single hammers 1 to 11 lbs. Easily — quickly.

COOK READY MADE LEAD HAMMERS
In stock from 1 to 11 lbs.

Ask for complete price list

LAWRENCE H. COOK, INC.
Successors To The Johnson Tool Co.
65 MASSASOIT AVE., EAST PROVIDENCE 14, R. I.
PLASTIC MOLDS AND TOOLS

▲ Mention Item NED-1125 when writing ▲

MULTIPLY YOUR

MOVES

WITH **alliance MOTORS**

• Millions of Alliance Phonomotors made for the radio industry bring mass-production "know-how" to the manufacture of *Alliance Powr-Pakt Motors* . . . motors from less than 1-400th h.p. on up to 1-20th h.p.

And so, besides *driving turntables, record changers and tuning devices,* Alliance motors are vital power links in modern operations which call for more motion—remote control—automatic action!

ALLIANCE PHONOMOTOR MODEL 80

WHEN YOU DESIGN . . . KEEP **alliance** MOTORS IN MIND

ALLIANCE MANUFACTURING COMPANY • ALLIANCE, OHIO

▲ Mention Item NED-1126 when writing ▲

YOU GET *Accuracy*

WHEN YOU SPECIFY EX-CELL-O DRILL JIG **BUSHINGS**

XLO

46—4

For years Ex-Cell-O has been known by American industry as headquarters for precision-made bushings . . . Ex-Cell-O carries one of the largest and most varied stock of drill jig bushings available in the world.

EX-CELL-O CORPORATION • DETROIT 6, MICHIGAN

▲ Mention Item NED-1127 when writing ▲

You Can't Beat 'Em For Quick Cleanout

CRANE Iron Body Clamp Gate Valves

WORKING PRESSURES: Up to 150 Pounds Saturated Steam; 225 Pounds Water, Oil, or Gas, Non-Shock.

In piping services where valves need frequent cleaning, Crane Wedge Disc Clamp Gates simplify and speed such work. Just loosen their "U"-bolt bonnet joint and the complete bonnet assembly lifts out, including the disc. Replacing it is just as easy.

ALWAYS TIGHT—With these valves, you can afford to take time for regular inspection and servicing that result in longer valve life. Repeated opening of bonnet joint doesn't affect its tightness. Also, Crane design in the seats and disc insures long-lasting tight closure.

ALL-IRON OR BRASS-TRIMMED—Ideal for many services, Crane Clamp Gate Valves come in OS&Y; Inside Screw; and Quick-Opening patterns; screwed or flanged ends. Sizes up to 4 in.

Write for Descriptive Folder AD-1667

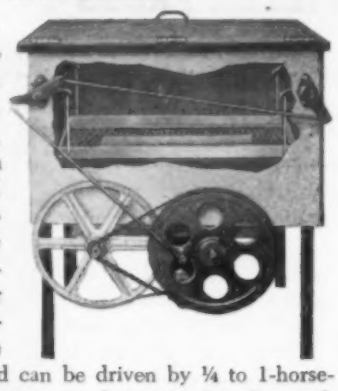
CRANE CO., General Offices: 836 South Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *For Anything in Piping Materials . . . Call CRANE!*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

▲ Mention Item NED-1128 when writing ▲

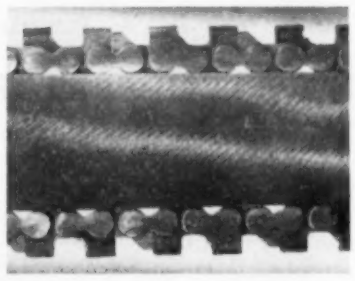
METAL PARTS WASHER



Active soaking type Super-Soak washer automatically lowers and raises tray into and out of soaking solution to remove oil, grease, dirt, carbon and sludge from small metal parts. No hand brushing or rinsing is required. Unit facilitates use of cold solutions and operator's hands need never come in contact with compound. Washers operate on simple lever principle and can be driven by ¼ to 1-horsepower motors. Washing solutions can be strained and reused. Three units are available in sizes ranging from 30 to 60 inches in width with capacity range from 200 to 550 pounds of work. Made by **Super-Soak Co.**, 1441 S. 65th St., West Allis 14, Wis.

▲ Mention Item NED-1129 when writing ▲

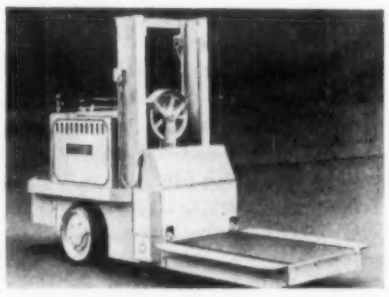
POWER SAW CHAIN



Difficult cuts, such as diagonals or those through heavy roots of swelled tree butts, can be handled with complete guide bar freedom with this model Titan R power saw chain. Principal feature of unit is that chain is easy to file. Operator, using round file, can sharpen chain on sawing machine without destroying set. No swedging or setting and only occasional jointing are required. Made by **Mill & Mine Supply, Inc.**, 2700 Fourth Ave. S., Seattle 4, Wash.

▲ Mention Item NED-1130 when writing ▲

DIE HANDLING ASSEMBLY



Making it possible for operator to push die from load platform onto press or storage rack quickly and easily, this die handling assembly is built into Mercury Mogul 5-ton high lift chassis or 3-ton high or low lift chassis truck models. Unit consists of two power driven die movers that operate in machined slots at sides of load platform. Each die mover is driven by compound wound direct current motor through Brad-Foote Gyro speed reducer and roller chains. Independent control of each die mover is effected by two pushbutton operated magnetic contactors. Buttons are located on dashboard.

Independent control of die movers makes accurate die spotting a simple matter. Die movers can be retracted into slots at rear of platform for skid handling. Additional control buttons can be located at rear of load platform if specified. Made by **Mercury Mfg. Co.**, 4038 S. Halsted St., Chicago 9, Ill.

▲ Mention Item NED-1131 when writing ▲

Only Speed LIFT GIVES YOU

1 *One Piece Frame Construction*

SPEEDLIFT is sturdy — has all-welded structural steel frame! No upkeep — no repairs — no spare parts! SPEEDLIFT is safe! The only exposed moving part is the endless RUFFTOP belt itself. The drive sprocket and motor area are enclosed.

2 *Quiet and Ease of Operation*

SPEEDLIFT is powered by a reversible 1/3 horsepower gear head motor for single phase, 60 cycle, 110 volt current with 25' extension cord. Two conveniently located START-N-STOP switches at either end (one reversible) mean simplified control of materials.

3 *Multi-purpose and Versatile*

SPEEDLIFT is adjustable — reversible — portable! It's adjustable to every conceivable elevation and angle from horizontal position to 35°. The reversible SPEEDLIFT can be used as an individual unit — as a connecting link in a system — or as a feeder conveyor!

KEEP 'EM ROLLING WITH SPEEDWAYS CONVEYORS, INC. 1246 Niagara St. Buffalo 13, N.Y.

Represented by experienced Material Handling Equipment Engineers in principal cities.

▲ Mention Item NED-1132 when writing ▲

● Unloading a car of coal into a bunker through any one of seven windows, with an 8-ft. distance from wall to car, could be a tough, costly task. A Chicago plant does this job with a Tote-All Conveyor and jib crane (as shown above) and cut the cost of unloading a 50-ton car from $50.00 to $25.00 and eliminated all demurrage charges!

Tote-Alls are used for hundreds of material moving jobs throughout industry. They do the job faster and at less cost. Available in 14-ft. and 20-ft. lengths—gasoline or electric power. Write for full details today. Ask for Bulletin NED.

A PRODUCT OF MATERIAL MOVEMENT INDUSTRIES
310 S. MICHIGAN AVE., CHICAGO 4, ILL.

material movement industries

. . . for lowest cost material handling

▲ Mention Item NED-1133 when writing ▲

Benchmaster's* Improved Model

4-TON CAPACITY BENCH PUNCH PRESS

* World's largest manufacturer of small presses.

SMALL IN SIZE

MIGHTY IN PERFORMANCE

FOR STAMPING, MARKING, PUNCHING, RIVETING, FORMING AND OTHER HIGH-SPEED OPERATIONS

Light, compact and powerful, the improved, post-war Benchmaster 4-Ton Capacity Punch Press offers performance formerly found only in far larger models. Its unusual and exclusive features include a cradle base that allows the press to be inclined; a precision-ground shaft keyed by a press fit to a large eccentric to provide shock-absorbing bearing surface, bronze bushings at all wear points, a single trip action that may be made to repeat rapidly by removing a screw located in the collar, automatic knockout, an open back so that work may also be inserted from the front, a new-type floating motor mount which maintains proper tension of the V-belt, standardization of parts for quick, easy interchangeability and many other typical Benchmaster improvements.

For full information about this new Benchmaster Punch Press and other quality Benchmaster machine tools, write to Dept. NED.2

SPECIFICATIONS

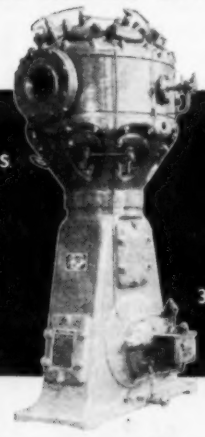
Weight, 215 lbs.
Height, 27"
Die space, 5¾"
Center of bolster plate to frame, 3⅜"
Bolster plate, 6" x 8" x 1" with 2" hole in center
285 strokes per minute with 1725 R.P.M. electric motor
1" stroke standard
Other strokes up to 2" special

benchmaster MANUFACTURING COMPANY
2952 WEST PICO BOULEVARD
LOS ANGELES 6, CALIFORNIA

▲ Mention Item NED-1134 when writing ▲

SAVES SPACE!

OPERATES MORE EFFICIENTLY



Anti-Friction Main Bearings

Force Feed Lubrication

Cylinder Liners replaceable on the job

Model WG-9

Available in sizes from 153 to 822 CFM
30 to 150 lb. pressure

Write for bulletin A-43

SULLIVAN

AIR COMPRESSORS
FROM ¼ HP TO 600 HP

Consult a Joy Engineer

SULLIVAN DIVISION
JOY MANUFACTURING CO.
GENERAL OFFICES: HENRY W. OLIVER BUILDING
PITTSBURGH, PA.

▲ Mention Item NED-1135 when writing ▲

Huge Stocks! TRANSMITTING AND SPECIAL PURPOSE TUBES

NEWARK NOW AGENTS OF WAR ASSETS ADMINISTRATION

Newark has been appointed agents of the War Assets Administration for transmitting and special purpose electronic tubes.

HUGE STOCKS! WIDE SELECTION!

This means that you can now get prompt Newark service on the previously hard-to-get tubes, priced at a fraction of their original cost. Make Newark your headquarters for tubes—whether it's for experimental work or production runs.

• MAIL AND PHONE ORDERS FILLED PROMPTLY

• WRITE: 242-K WEST 55th ST., N. Y. C.

Write for NEWARK'S LIST OF TUBES

Make Newark your source, too, for all needed radio and electronic parts. Brisk, competent service assures quick delivery.

NEW YORK Offices & Warehouse 242 W. 55th St., N.Y.19 NEWARK ELECTRIC COMPANY INC. Telephone Circle 6-4060

Acting as Agents for War Assets Administration under contract WAS(p) 7-187

New York City Stores: 115-17 W. 45th St. & 212 Fulton St.

▲ Mention Item NED-1136 when writing ▲

Announcing The New 1947 Transporter with ATCO ELECTRIC LIFT

The new 1947 TRANSPORTER has an electric-lift motor and pump which uses less current than reserve left in famous TRANSPORTER 11-plate battery at end of a full day's hauling. Yet it recharges from a light socket.

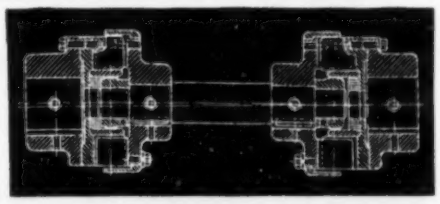
Simple pressure of forefinger on new ATCO ELECTRIC LIFT BUTTON raises load to moving height in SECONDS! Less than 10% of battery capacity is used to lift average load. All controls are operated from buttons and guiding handle.

In 4000 to 6000 pound capacity platform model and 4000 pound capacity pallet model. Also comes with ATCO FOOT LIFT at lower cost. Write for facts.

AUTOMATIC TRANSPORTATION CO.
DIV. OF THE YALE & TOWNE MFG. CO.
61 W. 87th St. • Dept. B-7 • Chicago 20, Ill.

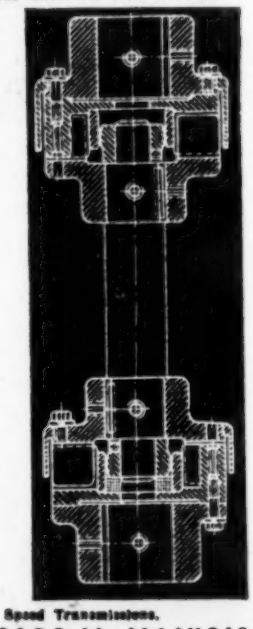
▲ Mention Item NED-1137 when writing ▲

Easy Line-up! ---and Non-Lubricated



Type HKQ Floating Shaft Coupling. Operating Assembly, above horizontal, below vertical. For heavy duties, various distances. Pat. & Pats.

A basic function of Lovejoy Couplings is correction for misalignment. Simplifies lineup of drive and driven units. Means protection of equipment, least servicing. Never require lubrication.



LOVEJOY L-R Flexible Couplings

Eliminate troubles. Insure even dependable power-flow day-in and day-out. Most economical. Couplings for every kind of service, from 1/6 to 2500 h.p. Send for complete catalog, with Selector Charts. Help to find your couplings in a jiffy!

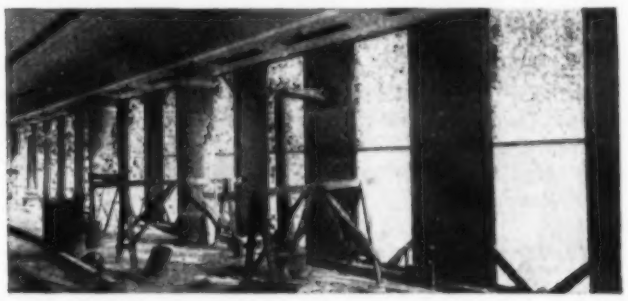
Lovejoy Flexible Coupling Co.
Also mfrs. of Lovejoy-IDEAL variable Speed Transmissions.
1003 W. LAKE STREET • CHICAGO 44, ILLINOIS

▲ Mention Item NED-1138 when writing ▲

NEW Processes AND Materials

PLASTIC GLAZING MATERIAL

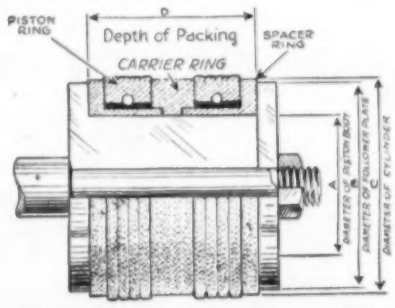
Transparent, shatterproof, flexible Richglaze plastic glazing material admits more than 60 per cent of sun's ultraviolet rays. Material is recommended for use wherever it is desirable to admit light and rays of sun and yet provide weather barrier. It can be used to close in buildings under construction, to serve as winter closure for outside scaffolding, as safety glazing under glass skylights to stop falling glass and as heat and dust barriers in greenhouses, warehouses and factories. It is installed by cutting sheets to size with scissors and nailing on frames. Thirty-six-inch width rolls can be furnished in 150 and 450-square foot sizes. Made by Richkraft Co., 165 W. Wacker Dr., Chicago, Ill.



▲ Mention Item NED-1139 when writing ▲

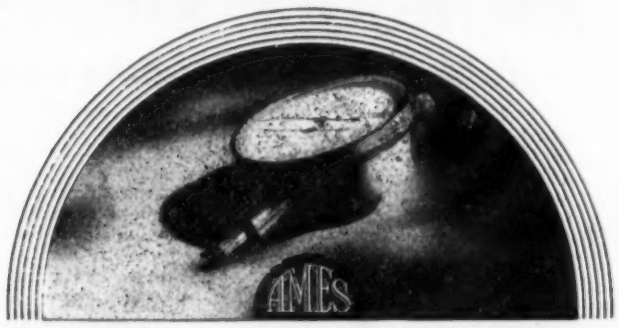
PISTON PACKING

Adaptable to reciprocating pumps and other equipment with cylinder diameters ranging from 3 to 20 inches, and using ½-inch packing or larger, Piston-Pak packing is an assembled unit composed of central carrier ring and spacer rings that form grooves for free working piston rings. Packing operates with minimum friction and eliminates swelling, binding, grooving and wire drawing. It is made of self-lubricating Bakelite material and is built to fit over piston. Material is recommended for equipment handling hot or cold water, oils, distillates, gasoline, carbon dioxide, naphtha, kerosene, brine, beer, mild acids and solvents. It will withstand temperatures of up to 280 F and pressures ranging to 500 pounds per square inch.



Units are easily installed and are held securely in place by follower plate. For best results, cylinder should be true and smooth. Made by A. T. Doyle Co., 6112 Page Blvd., St. Louis 14, Mo.

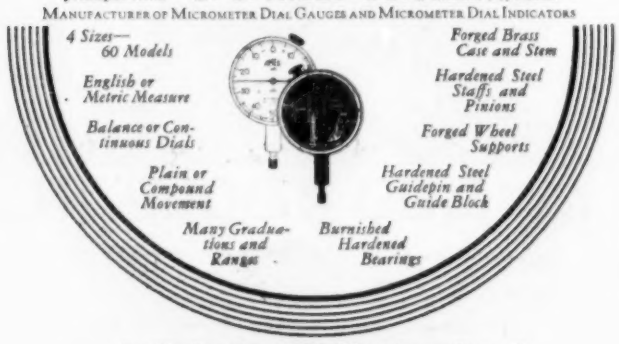
▲ Mention Item NED-1140 when writing ▲



GOOD IN THE 4TH DIMENSION, TOO!

For tool checking or tough production jobs, Ames Dial Indicators are *time*-conserving as well as sensitive and accurate. They're *quickly* mounted and adjusted. Their dials are *instantly* readable. But *most time-saving* is their ability to stay *right* on the job, without internal adjustment—*longer* than any other indicator you can buy. Send for illustrated Catalogue.

Representatives in principal cities B. C. AMES CO. 34 Ames Street Waltham 54, Mass.
MANUFACTURER OF MICROMETER DIAL GAUGES AND MICROMETER DIAL INDICATORS



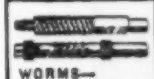
▲ Mention Item NED-1141 when writing ▲

Abart Quality GEARS

Steel, brass, bronze, cast iron, any metallic or nonmetallic gear material.

SPUR — 96 D.P. 5/7 D.P. ⅛" P.D. to 18" P.D.

BEVEL—48 D.P. to 5/7 D.P. Max. P.D. 6¼". Max. ratio 4 to 1



WORMS— 32 D.P. to 5/7 D.P. ⅛" P.D. to 5" P.D.

INFORMATION PLEASE!

WHAT GEAR MATERIALS ARE OF QUALITY REQUIRED BY OUR PARTICULAR NEEDS?
.... A Multitude of Gear Users

PRECISION —long gear life—dependable service—economy—hinge on the correct answer to this question as well as types. You are invited to counsel with the long experience of Abart without obligation.

Abart GEARS
To your specifications

No stocks. Modern gear finishing equipment for shaving gears in pitches from 64 D.P. to 5/7 D.P. Send B/P or samples for prompt quotation. Any quantity, small or large.

Abart Speed Reducers: Over 75 types and sizes. Send for catalog.

Abart GEAR & MACHINE CO.
4822 W. 16th ST. CHICAGO 50, ILLINOIS

Worm Wheels 32 D.P. to 5/7 D.P. 1" P.D. to 14" P.D.

Helical & Spiral— 96 D.P. to 6 D.P. up to 14" D.P.

INTERNAL—⅛" P.D. to 12" P.D. 64 D.P. to 5/7 D.P.

SPROCKETS— 1¼" dia. to 14" dia.

▲ Mention Item NED-1142 when writing ▲

Cuts Sheet Steel, Aluminum, Plastics, Plywood, Cast Iron, etc.

Here's real news: No starting holes required. No delays. "Milled edge" finish in one operation. No filing, straightening or deburring edges. Saws practically any sheet material (except stainless steel) up to ¼" thick. Adjust "shoe" for desired depth of cut. The Kett Power Saw does everything and more than shears or nibblers do—and does it easier and better. Easy to saw on straight lines or curves of 12 inch radius or more. Blades are inexpensive, last long, are replaced in half a minute.

Write for interesting bulletin E. Or better still . . . Ask your dealer for a demonstration. No obligation.

THE KETT TOOL COMPANY
5 East 3rd Street • Cincinnati 2, Ohio

▲ Mention Item NED-1143 when writing ▲

• NO RIVETS
• NO SCREWS
Simple-to-apply MEYERCORD nameplates are washable, durable, colorful!

DEVINE BROTHERS, UTICA, N. Y., HAVE USED THEM FOR YEARS ON HEAVY DUTY MACHINERY

Low-cost Meyercord Decals *advertise* as they *identify*. Trademarks, charts, instructions, etc., can be produced in any size, design or colors . . . for application at production line speeds. Meyercord Decals adhere smoothly, even on rubber or crinkle finish, curved or flat. They resist acids, vibration, abrasion, wear. For complete information, write Dept. 13-2

THE MEYERCORD CO.
World's Leading Decalcomania Manufacturer
5323 WEST LAKE STREET • CHICAGO 44 ILLINOIS

▲ Mention Item NED-1144 when writing ▲

▲ Mention Item NED-1146 when writing ▲

PRICE REDUCTION!

All 84-B Gage Block Sets formerly listed at $235.00 have been reduced to . .

$195.00

F. O. B. CLEVELAND

Set of 84-B Webber Gage Blocks; finished to an accuracy of .000008". The 84 blocks range in sizes from .050" to 4.000". Wear blocks included.

WEBBER GAGE COMPANY
12922 TRISKETT RD., CLEVELAND 11, O.

WEBBER MAKES PRECISION GAGE BLOCKS EXCLUSIVELY
- Gage Block Sets in Steps of .00005"
- Individual Special Size Blocks
- Heavy Duty Gage Blocks
- Angle Gage Blocks in Steps of one second
- Carbide (Carbide) Wear Gages

Webber PRECISION GAGE BLOCKS

▲ Mention Item NED-1147 when writing ▲

SHEAR IT CLEVERLY with a BEVERLY

CUTS . . .

STRAIGHT — CURVES — ANGLES

Beverly Throatless Shears cut metal flatly —ACCURATE—no waste, no distortion. Made of finest steel—PROFITABLE—INEXPENSIVE! Will last a lifetime!

No. 1 — cuts 14 gauge — wt. 18 lbs.
No. 2 — cuts 10 gauge — wt. 35 lbs.
No. 3 —(With ball bearing hold-down device) cuts 3/16 inch mild steel and 10 gauge stainless steel, weight 58 lbs.

THE BEVERLY SHEAR MFG. CO.
3004 W. 111th St., Chicago 43, Ill.

▲ Mention Item NED-1148 when writing ▲

New Processes & Materials

ELECTRICAL TOOL INSULATION

Tools used in electrical and high tension work are insulated durably and reliably by means of Cohardite which is made by combining properties of Geon polyvinyl plastic and Hycar oil resistant American made rubber. These latter two materials are products of B. F. Goodrich Chemical Co. In addition to insulation properties, handles insulated with Cohardite have excellent impact, oil and grease resistance. Linemen's pliers shown at top have been tested to 28,000 peak volts. Insulation made by Connecticut Hard Rubber Co., New Haven, Conn.

▲ Mention Item NED-1149 when writing ▲

NICKEL & MONEL CLAD STRIP

Nickel and Monel clad strip combines corrosion resistance and strength of nickel or Monel with the properties of steel. Strip is available in widths ranging from 0.25 to 10.25 inches in coils up to several hundred feet in length depending upon gage. Cladding can be furnished on both or on only one side depending on requirements. Standard cladding thickness is 1 per cent of total thickness. In cold rolled condition, strip is produced in thicknesses between 0.010 and 0.125-inch. In hot rolled condition it is available in thicknesses between 0.095 and 0.25-inch.

Separation of nickel or Monel cladding from steel base cannot be effected by mechanical means or heating. Because of this, strip can be stamped, drawn, spun, bent, spot welded or otherwise fabricated in same manner as ordinary low carbon deep drawing steel. Cost of strip is approximately 30 to 3 per cent less than that of solid nickel or Monel. Made by Superior Steel Corp., Carnegie, Pa.

▲ Mention Item NED-1150 when writing ▲

SYNTHETIC ENAMEL

Applicable on wood or metal, Plastolac synthetic enamel dries quickly with glossy, hard and durable finish. Coating is said to be impervious to frequent washings and is recommended for both interior and exterior use. One coat covers most surfaces which have been painted previously and two coats are recommended for painting new wood.

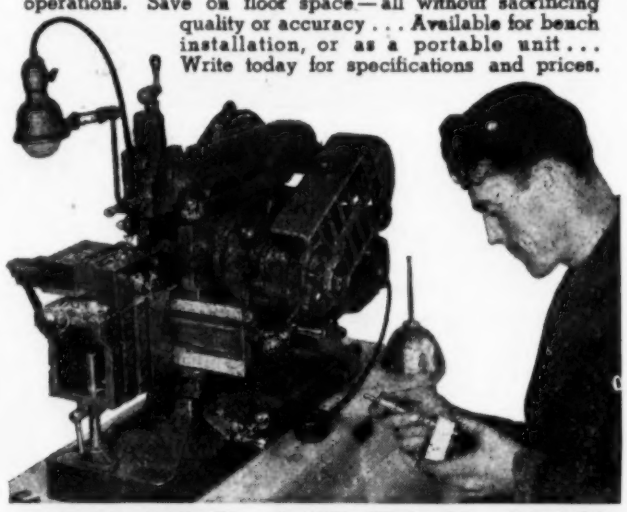
Enamel is available in 22 shades and colors. It is packaged in ¼ and ½-pint quantities and in quarts and gallons. Enamel can be used for painting toys, automobiles, farm machinery, garden tools, furniture, etc. Made by Gillespie Varnish Co., Dey St., Jersey City 6, N. J.

▲ Mention Item NED-1151 when writing ▲

AMMCO 7" SHAPER

A precision machine for precision work

Phenomenal performance of the Ammco Precision Shaper in war production work is an indication of its great value in the postwar period when your competitive conditions put added importance on accuracy and low-cost production. Make more money . . . save on time and expense on set-up operations. Save on floor space—all without sacrificing quality or accuracy . . . Available for bench installation, or as a portable unit . . . Write today for specifications and prices.



AMMCO TOOLS, INC.

COMMONWEALTH AVENUE AMMCO NORTH CHICAGO ILLINOIS

(Formerly Automotive Maintenance Machinery Co.)

▲ Mention Item NED-1152 when writing ▲

4 BASIC "STREAMAIRE" STYLES MEET EVERY NEED

● Selecting the right convector is easy today, thanks to Young pioneering. *Standardization* simplifies specifications, assures quicker delivery and installation, reduces production costs, makes this modern heating equipment available at a low cost. *Packaging* hastens handling, lessens danger of damage. "Streamaire" Convectors soon may be ordered from stock. Write for catalog today.

YOUNG

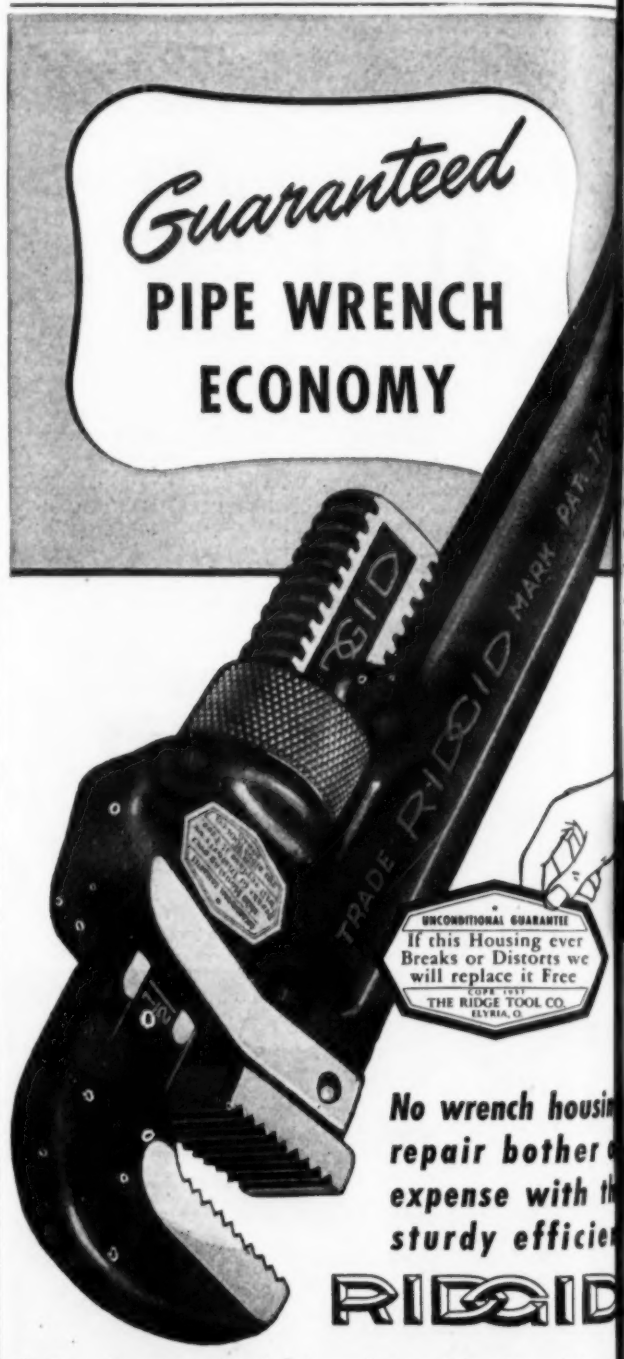
HEAT TRANSFER PRODUCTS

OIL COOLERS • GAS, GASOLINE, DIESEL ENGINE COOLING RADIATORS • HEAT EXCHANGERS
INTERCOOLERS • EVAPORATIVE COOLERS ENGINE JACKET WATER COOLERS
GAS COOLERS • UNIT HEATERS CONVECTORS • CONDENSERS • AIR
CONDITIONING UNITS • EVAPORATORS HEATING COILS • COOLING COILS
AND A COMPLETE LINE OF AIRCRAFT HEAT TRANSFER EQUIPMENT

YOUNG RADIATOR CO., Dept. 427B, RACINE, WIS., U.S.A.
Sales and Engineering Offices in all Principal Cities

▲ Mention Item NED-1153 when writing ▲

Guaranteed PIPE WRENCH ECONOMY



No wrench housin repair bother expense with th sturdy efficien

RIDGID

● So strong, efficient and trouble-free it's n wonder millions of users prefer it. And economic —that guarantee saves you all wrench housing e pense and bother. Easy-spinning adjustment nut in all sizes, 6" to 60". Positive-action jaws, handy pipe scale on hookjaw, comfort-grip handle. For top wrench value buy work-saver RIDGIDs — at your Supply House.

End pattern for pipe in coils, again flat surfaces.

RIDGID

WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO

▲ Mention Item NED-1154 when writing ▲

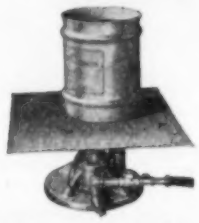
Are Your Customers Disappointed?

—when they open up your containers and find them only one-half or three-quarters full?

SYNTRON

PACKERS

Electric Vibratory



Hydraulic Jolters

Increase Packing Efficiency

By enabling you to reduce the size of your container, and filling and settling to capacity.

—and by eliminating slow, laborious hand pounding and jarring.

Write for catalog literature

SYNTRON CO., 405 Lexington, Homer City, Pa.

▲ Mention Item NED-1155 when writing ▲

GIVE 'EM AIR-

WITH Peerless UTILITY BLOWERS

- Factories
- Warehouses
- Restaurants
- Cafes
- Stores
- Garages
- Schools
- Theaters

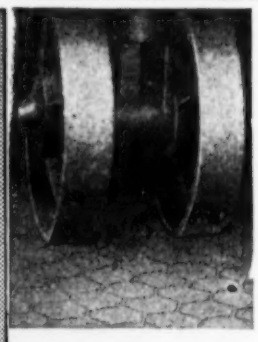
Where gases, fumes, and foul air must be removed through ducts, Peerless Utility Blowers keep air circulating at low operating cost.

Heavy sheet metal construction . . . single inlet blower wheel . . . four different discharge positions . . . correct design and accurate construction, make Peerless a favored blower wherever vent work is demanded. Write for complete information.

THE Peerless ELECTRIC CO.
WARREN, OHIO

▲ Mention Item NED-1156 when writing ▲

PERMANENT ECONOMICAL FLOORS WITH Klemp HEXTEEL HEAVY DUTY SURFACE ARMOR



Heavy duty steel grid imbedded in concrete or mastic over old or new floors. Concrete or mastic "wood-floated" flush with top of grid and tamped or troweled. Exposed steel surface takes brunt of traffic.

A FLOOR TO END ALL FLOOR TROUBLES!

Solid. Level. Enduring. Banishes potholes, ruts, cracks, or disintegration. Practically maintenance free. HEXTEEL units 3' x 10', or specially cut to fit any area. Fit closely around columns, machines, etc. 12-and 14-gauge thicknesses, ¾" to 1¼" depths. Easily joined, making one-piece mat.

Send for complete Klemp catalog. Also shows Klemp Floorsteel, armor that rolls out like a rug; Klemp Open Steel Gratings, welded and riveted; Steel Stair Treads; Safety Mats. Wire or write.

WM. F. KLEMP CO. 6607 S. Melvina St. Chicago 38, Ill.

▲ Mention Item NED-1157 when writing ▲

New Processes & Materials

FLEXIBLE GAS TUBING

Available in ¼, ⅜, ½, ⅝, ¾, 1 and 1¼-inch sizes, Carbo-Flex flexible gas tubing can be used to connect testing apparatus, portable heaters, floor furnaces, refrigerators, stoves and other natural or manufactured gas fired equipment. Tubing is furnished in standard lengths of from 1 to 6 feet and in other lengths for special applications. Wiggins Quick Couplings are located at both or at either end, as desired, and pull-push operation effects tight, leakproof seal.

Tubing has heat and acid resistant neoprene lining. Outside can be furnished in stainless steel, Monel, bronze, brass, copper, aluminum or other metals. Self-sealing valve provides positive leakproof safety while coupling is disconnected. Made by **Carbo-Flex Hose Co.**, 5452 Vineland Ave., North Hollywood, Calif.

▲ Mention Item NED-1158 when writing ▲

PLASTIC GRAINING PROCESS

Offering new design opportunities to fabricators of Lucite, Plexiglas and cellulose acetate, PGL plastic graining process is available on custom basis. When viewed through transparent plastic, it produces colorful realism. Actual photographic reproductions of select leather and wood grains can be made. Process can be applied to sheets of standard 20 x 48-inch material or larger. Grained sheet can be combined with base materials by means of cutting and forming. Developed by **Pastime Products Co.**, 633 W. Larned St., Detroit 26, Mich.

▲ Mention Item NED-1159 when writing ▲

CORROSION PREVENTIVES

Series of nine Cosmoline corrosion preventives is available to meet all manufacturing, shipping and storage problems. Four of the preventives are of removable thin film solvent type, one is nonremovable dielectric variety and remaining four are oil type films varying in viscosity from thin oil film to medium grease consistency. Line is said to give complete protection for temporary intraplant movement of articles as well as for shed and outdoor exposures. Made by **E. F. Houghton & Co.**, 303 W. Lehigh Ave., Philadelphia 33, Pa.

▲ Mention Item NED-1160 when writing ▲

VALLEY DRILLS

AUTOMATIC—PNEUMATIC

—Patent Applied For—

With standard Pneumatic Rotary Drill Motors mounted in a two-way air cylinder.

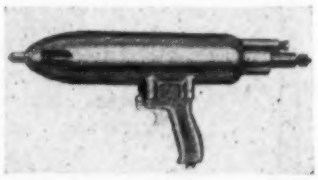
If you are interested in reducing the cost of drilling and reaming up to ½" as well as eliminating your capital investment on a machine to do this work, then screw our Automatic Pneumatic Drills with hydraulic feed control with adjustable stop for accurate depths right onto your jig with adaptor drill bushing.

These units are supported entirely by the adaptor drill bushing and will operate at any angle or plane—simultaneously or intermittent. The only control necessary is a standard four-way air valve.

This method eliminates expensive heavy machines and troublesome electrical control panels. Air cushioned feed reduces drill breakage and the motor will not burn up if the drill is stalled.

These drill units can be transferred from one jig to another and use a different size drill within its capacity in a few minutes using the same air control valve and the same air hose connections.

Above: Model "S" Stationary Installation



Above: Model "P"—Portable Hand Drill For portable hand drilling in jigs having large quantities of holes of the same size. No physical effort required since the drill unit locks in the drill jig lock liner bushing by a hex-bayonet lock drill bushing which screws into the nose of the drill.

Send in your part print for our recommendations —OR write for catalog—

VALLEY TOOL COMPANY

5926 MAYWOOD AVENUE HUNTINGTON PARK, CALIF.

▲ Mention Item NED-1161 when writing ▲

Geon *Polyvinyl Materials*

for EXTRUSIONS • MOLDED GOODS
CALENDERED OR CAST SHEET OR FILM
COATINGS FOR FABRICS OR PAPER

Wide uses in these and other fields

TEXTILE • ELECTRICAL • PLASTICS
SHOE • PAPER • UPHOLSTERY • METALS
PACKAGING • FOOD AND BEVERAGE

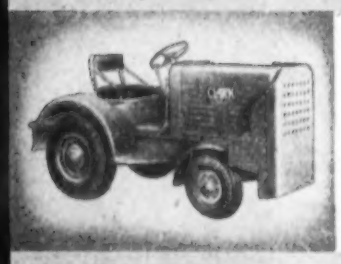
★ The number of uses for these materials seems limitless. There may be worth-while applications in your business. Our development laboratory will be glad to work with you on special or routine applications. Limited quantities of GEON may be had for experiment. For more information write Department Y-1.

B. F. Goodrich Chemical Company
A DIVISION OF THE B.F. GOODRICH COMPANY
324 Rose Building • Cleveland 15, Ohio

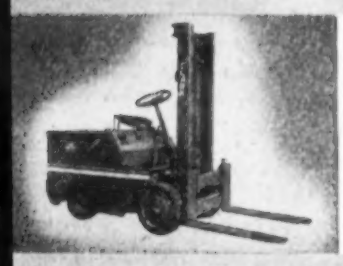
▲ Mention Item NED-1162 when writing ▲

Cut Cost Factors with Clark Tructractors

The New CLARKAT



The Famed CLARKTOR 6



Electric FORK TRUCK

Gas Powered FORK TRUCK

ABOVE EVERYTHING ELSE . . .

in the material handling field, Clark Methods and Clark Machines are outstanding, permitting maximum savings in man hours and handling costs. The full story in pictures — "Material Handling News" — is yours for the asking.

CLARK TRUCTRACTOR
Division of CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN
OTHER PLANTS – BUCHANAN, JACKSON, BERRIEN SPRINGS, MICHIGAN

Other CLARK Products

FORK LIFT TRUCKS
TOWING, DUMP AND SHOVEL TRACTORS
RAILWAY TRUCKS
DRILLS & GEARS
ELECTRIC STEEL CASTINGS
METAL SPOKE WHEELS
AXLES & HOUSINGS
TRANSMISSIONS

Prices on CLARK products will not be advanced in excess of increased costs.

▲ Mention Item NED-1163 when writing ▲

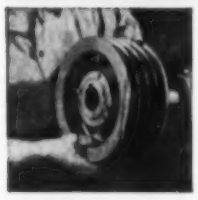
Quick And Easy On-Off Action

"MAGIC-GRIP" SHEAVES

Save You Both Time and Money

1. To put on: place sheave on shaft, slide to spot desired, line up exactly with corresponding driver or driven sheave, tighten three cap-screws. Grips like magic; assures smooth performance.

2. To take off: remove the three cap-screws, use two of them as jack-screws to separate bushing from sheave. Released, tapered bushing regains natural expansion, automatically breaking tight grip of bushing.



3. On or off, "Magic-Grip" sheaves slide easily without hammering or forcing. They cut "down time," reduce maintenance costs. Your nearest Allis-Chalmers office or dealer has details, or write for Bulletin 20B6310.

A 2178

ALLIS CHALMERS MILWAUKEE 1 WISCONSIN

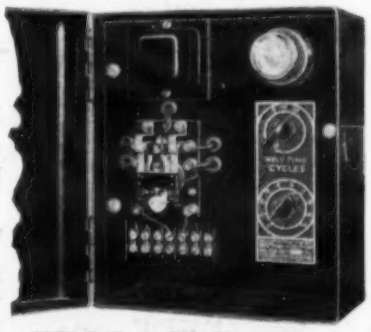
▲ Mention Item NED-1164 when writing ▲

"3C" WELDMASTER *provides* EXTREMELY ACCURATE *and* CONSISTENT TIMING *for* RESISTANCE WELDERS

This semi-automatic, Electronic Welding Timer provides the extremely accurate, dependable timing required for controlling closed time of primary welding contactor, while a resistance weld is being made. May be used on manual, air, or motor operated welders having maintained contact type initiating switch. Designed for reliability and long life.

FEATURES:

- Adjustable over a wide timing range.
- Extremely accurate timing.
- Indexed dial permits timer to be reset exactly to any previously used time period.
- Uses only one electronic tube and one relay.
- Accuracy not affected by frequency or length of operation.
- NEMA Type 1 Enclosure Standard.



"3C" Bulletin 7744 Electronic Weldmaster Timer—Cover open.

Write for "3C" Bulletin 7744

THE CLARK CONTROLLER CO.

EVERYTHING UNDER CONTROL • 1146 EAST 152nd STREET, CLEVELAND 10, OHIO

▲ Mention Item NED-1165 when writing ▲

truck-man DOES A JOB !

Truck-Man saves time and money for this busy manufacturer. He's "sold" on Truck-Man for these reasons:

- Lifts and hustles skidded capacity loads—without starting or dropping shocks . . .
- Turns in 360°—snakes into holes its own length—increases usable floor space . . .
- Grouped controls speed operation, cut fatigue . . .
- Speeds briskly on straightaways—creeps in narrow aisles and close squeezes...
- Drives on big DUAL pneumatic-tired wheels for traction and easy riding . . .
- Stands the gaff—tireless, day in, day out! TRUCK-MAN is ECONOMICAL TO OWN, EASY TO BUY!

Get the FACTS on TRUCK-MAN.

Write now for new Model D folder

$775.00 F. O. B. Jackson

65 Distributors in principal centers provide standard service

truck-man INC.

1414 West Genson, Jackson, Mich.

▲ Mention Item NED-1166 when writing ▲

New Processes & Materials

PRECISION ALLOY CASTINGS

Produced in any castable alloy, small precision castings can be supplied to tolerances as close as 0.002-inch or less. Both centrifugal and vacuum methods of casting are employed, latter providing maximum accuracy. Parts have satin-smooth finish so that frequently they can be used without further machining. Castings can be supplied to suit customer's specifications. Where desired, samples or production runs can be checked for surface imperfections by Zyglo ultraviolet light process and for internal defects by x-ray examination. Service offered by **Aro-Cast Corp.** and **Precise Castings Corp., Hillside,** N. J.

▲ Mention Item NED-1167 when writing ▲

BAKED ENAMEL FINISH

Capable of withstanding temperatures of more than 500 F without yellowing, Polytherm heat resisting baking enamels are made in white, black and colors. Though different in formation and structure, this enamel is as easy to apply as other types. It sprays at extremely high solids content and bakes to hard, smooth, lustrous finish with excellent hiding qualities, high gloss and freedom from orange peel. It has good color retention, is unaffected by hot fats and greases, and is immune to most chemicals including alkalies. Developed by **Interchemical Corp.,** Finishes Div., 350 Fifth Ave., New York 1, N. Y.

▲ Mention Item NED-1168 when writing ▲

CASTING PLASTIC

Possessing wide range of adaptability, Castolite transparent liquid plastic has consistency of syrup before being cast and hardened. Unusual feature is that material requires no pressure and not much heat to set. Plastic can be hardened in conventional kitchen oven.

In scientific fields, material can be used to preserve permanently, in original color and form, different specimens of insect and plant life. Any hue or color can be given plastic by adding dye to liquid before being cast. Other common and recommended uses for material include objects such as bookends, pen holders, picture frames and costume jewelry. Introductory kits are available from manufacturer. Made by **Castolite Co.,** Box 211, Dept. R-22, Kenilworth, Ill.

▲ Mention Item NED-1169 when writing ▲

TIP-TOE Control

Saves Time! Prevents Accidents to Valuable Hands!

Simonds LINEMASTER JR. FOOT SWITCH

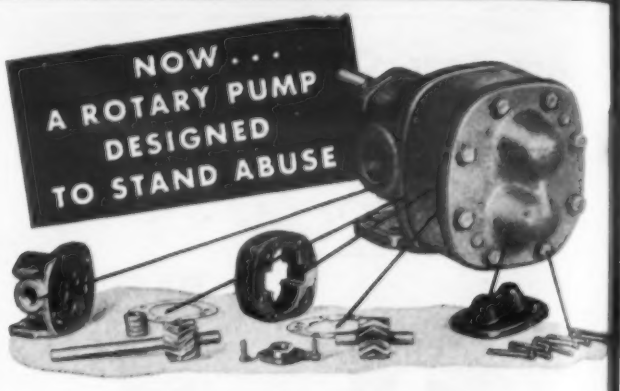
Hands busy? Put toes to work! LINEMASTER "JR." is the answer to your demand for a smaller, quieter, lightweight foot switch. Promotes safety and economy. Fully enclosed in streamlined aluminum housing. Black crackle finish.

Switch may be operated by momentary contact of toes—with foot resting on linear.

5½x¼x1¼—Weight 1 Lb.
Price $7.50

SIMONDS MACHINE CO., Inc.
33 VIKING TERRACE
SOUTHBRIDGE, MASS.

▲ Mention Item NED-1170 when writing ▲



WORTHINGTON TYPE GA ROTARY FOR GENERAL LOW-CAPACITY SERVICE

SPECIAL HERRINGBONE GEARS . . . quieter, more efficient than ordinary spur gears . . . eliminate axial thrust, prevent trapping, need less power.

PRESSURE LUBRICATION with liquid being pumped prevents contamination, keeps four large-capacity bearings at peak efficiency over a longer life.

RATINGS: 1.6 to 51 gpm from speed range of 850, 1150 and 1750 rpm . . . against pressures up to 100 psi.

COMPLETE LINE: foot or flange mounted . . . with or without relief valve . . . with packed stuffing box or with mechanical seal.

Write for Bulletin W-484-B10

WORTHINGTON PUMP AND MACHINERY CORPORATION
Merchandising Division, Harrison, N. J.

B6 448

WORTHINGTON

▲ Mention Item NED-1171 when writing ▲

OHIO ROUND WELD PADS

These steel pads have projections for anchoring to sheet steel, using standard Press Welders.

Production Sizes:

Dia.	Thickness	Dia.	Thickness
3/8	1/8	5/8	1/8
3/8	5/32	5/8	3/16
3/8	3/16	5/8	1/4
1/2	3/32	5/8	5/16
1/2	1/8	3/4	1/8
1/2	5/32	3/4	3/16
1/2	3/16	3/4	1/4
1/2	1/4	1	1/8
9/16	1/4	1	3/16
		1	1/4

For information and samples, write to

THE OHIO NUT & BOLT COMPANY
608 FRONT STREET, BEREA, OHIO

▲ Mention Item NED-1172 when writing ▲

AIRETOOL'S NEW HAND GRIP VALVE

For buffing, grinding, polishing, and general utility use, this new Airetool development will give you additional service from your Airetool motor.

Hand grip in design, it features a Trigger valve which regulates the air supply to give easy and simple motor control.

AIRETOOL
MANUFACTURING COMPANY
308 So. Center St. Springfield, Ohio

▲ Mention Item NED-1173 when writing ▲

Chain pulling is obsolete—costs too much—and is too slow. A Northern Travelator quickly changes your old overhead hand travelcrane to modern electric power travel. Any good mechanic can install it in less than half a day.

Just push a button to operate. Workmen like them because they do away with back-breaking work.

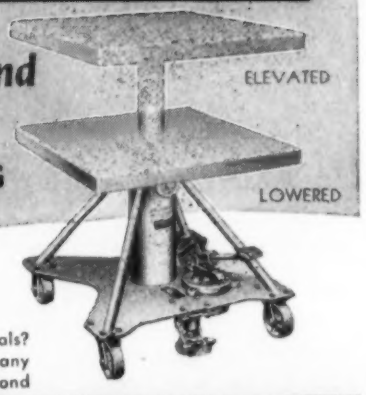
WRITE FOR BULLETIN 2400

NORTHERN ENGINEERING WORKS
2615 Atwater Street, DETROIT 7, MICH.
Offices in Principal Cities

▲ Mention Item NED-1174 when writing ▲

THE ANSWER To Many LIFTING Problems

LYON-Raymond PORTABLE HYDRAULIC ELEVATING TABLE



Worried about costs? Speed? Safety? Damage? — and other factors in handling materials? Then look into these many jobs this handy Lyon-Raymond Elevating Table is designed to do.

HERE-ARE JUST 12 OF ITS USES:

1. Die handling
2. Sheet feeding
3. Adjustable section in conveyor system
4. Work table
5. Assembly bench
6. Positioning work to machine
7. Support for overhanging work
8. Adjustable test bench
9. Transfer table
10. Positioning parts for attachment
11. Welding positioner
12. Loading and unloading

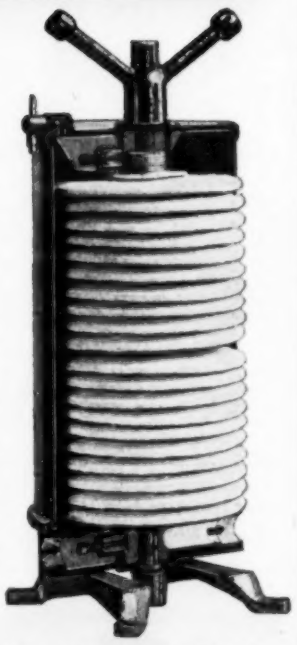
We have prepared an illustrated bulletin full of suggestions that methods engineers will find most helpful. It's free! Write for your copy today!

LYON-Raymond Corporation
[illegible] Madison St., Greenville, N. Y.

▲ Mention Item NED-1175 when writing ▲

"Disc-Pak" FILTER FOR OILS

Removes particles down to the Millionth of an Inch



The Alsop New "*Disc-Pak*" Filtration Principle completely removes dirt, rust, moisture, sludge, metallic particles and all other impurities from Turbine, Fuel, Diesel, Transformer, Hydraulic Oils, Water, etc.

The Filter "*Disc-Paks*" are made in eight different densities, making available practically any degree of fineness of filtration you may desire. Our finer discs will remove particles down to the millionth part of any inch. Write for your copy of Bulletin No. 144 today.

ALSOP ENGINEERING CORPORATION
282 East Road Milldale, Connecticut

▲ Mention Item NED-1176 when writing ▲

NEW Literature AND Catalogs

SYNTHETIC RUBBER PRODUCTS—Illustrated booklet presents results of laboratories' evaluation of compounds made from synthetic rubber of all types when they have been exposed to various oils, fuels and solvents—shows molded items, extruded shapes, lathe-cut washers and sheet and roll goods—issued by Acadia Synthetic Products Div., Western Felt Works, 4117 Ogden Ave., Chicago, Ill.

▲ Mention Item NED-1177 when writing ▲

INSTRUMENTS, TOOLS & EQUIPMENT—96-page illustrated 1947 tool catalog presents engineering and application information on laboratory instruments, machine tools, machinists' tools, measuring instruments, optical equipment, toolroom specialties, transmission equipment and gears, couplings, chains, speed reducers, variable speed drives, V-belts and sheaves—issued by George Scherr Co., Dept. NED, 200 Lafayette St., New York 12, N. Y.

▲ Mention Item NED-1178 when writing ▲

DUST COLLECTORS—16-page illustrated technical bulletin No. 101 presents details of rotor, pump and orifice types Hydro-Whirl wet dust collectors applicable in buffing, grinding and trimming operations, molding and foundry work and other industrial operations—collectors can be furnished for small applications or in large battery type units for central systems—available upon letterhead request—issued by Peters-Dalton, Inc., 17900 Ryan Rd., Detroit 12, Mich.

▲ Mention Item NED-1179 when writing ▲

HACK SAW BLADES & BAND SAWS—16-page illustrated G. W. Griffin Co. price list covers high speed steel power machine blade of 18-4-1 tungsten steel for cutting hardest alloys, special alloy molybdenum high speed steel blade for fast economical production metal sawing, New Griffin hand saw blade, and Non-Strip hand saw blade—data are given also on band saw machine operation—issued by John H. Graham & Co., 105 Duane St., New York 8, N. Y.

▲ Mention Item NED-1180 when writing ▲

ELECTRICAL CODE DATA—408-page book "National Fire Codes, Vol. V, National Electrical Code" 1947 edition is collection of rules governing installation and use of electrical equipment to reduce hazard of electrical fires and accidents—contains examples, index of publications relating to sections of code, and section of approved products—price is $2—published by National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

▲ Mention Item NED-1181 when writing ▲

HEATING SYSTEM—8-page illustrated bulletin No. 2083 describes Electro-Vapor heating system for chemical process vessels which combines advantages of electricity and Dowtherm heating—provides accurately controlled uniform heating at low electrical energy cost—issued by Blaw-Knox Div., Blaw-Knox Co., P. O. Box 1198, Pittsburgh, Pa.

▲ Mention Item NED-1182 when writing ▲

PORTABLE CONVEYORS

- *In standard mobile units*
- *Easily rolled from place to place*
- *Quickly coupled together*

When plant operations require changes in conveyor equipment, it's no trick at all with Buschman Portable Conveyors! There is no need to move stands. One stand supports two sections equally. For passage through the line, just pick a section out of the line—easily and quickly. Put it right back—without fuss or trouble. Convenient straight and curved mobile sections are quickly, firmly joined with Buschman "Quick-Eez" couplings. Both Roller and Wheel types have full ball bearings . . . are mounted on swivel castors . . . stands provide adjustable heights. Low in price! Write for detailed Bulletin 10.

Agents in Principal Cities

THE E. W. BUSCHMAN CO., INC.
Spring Grove at Winton Place Cincinnati 32, Ohio

▲ Mention Item NED-1183 when writing ▲

YOUR EMPLOYEES WILL APPRECIATE *Bradleys*, TOO

- Plenty of Clean Running Water
- No Delays—No Waiting
- Save Space
- Reduce Water Consumption
- One Sprayhead replaces many faucets
- Less Janitor Work

America's accepted group washing fixture has invariably proved an employee goodwill builder wherever installed. Employees enjoy the many conveniences made possible with a Bradley Washfountain and heartily approve of the health protection such an installation assures.

One Bradley does the work of 8 to 10 "single person" wash basins thereby eliminating many piping connections, reducing plumbing fixtures and saving space. Industrial records also reveal a 70% drop in water consumption, a definite reduction in hot water costs besides a valuable aid in promoting cleanliness and health . . . . . BRADLEY WASHFOUNTAIN CO., 2253 West Michigan Street, Milwaukee 1, Wisconsin.

BRADLEY washfountains

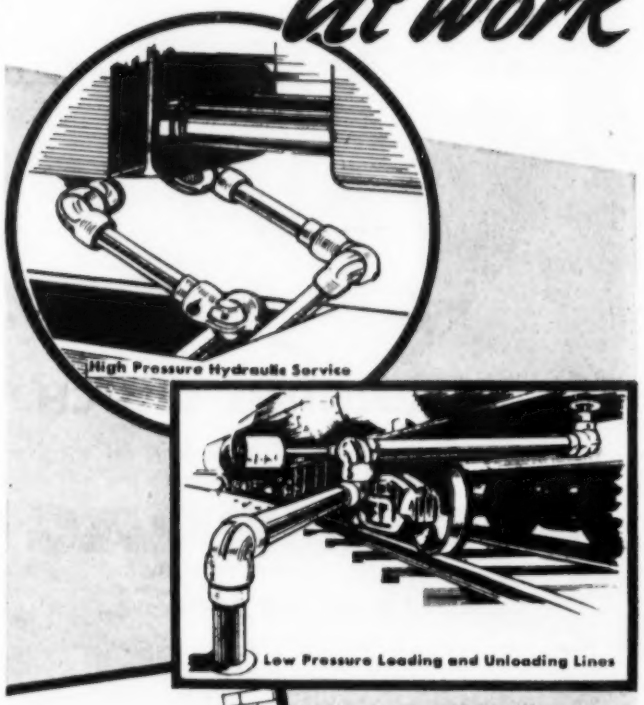
For further interesting details and delivery date write today for picture Catalog 4308 and Washroom Survey Sheet.

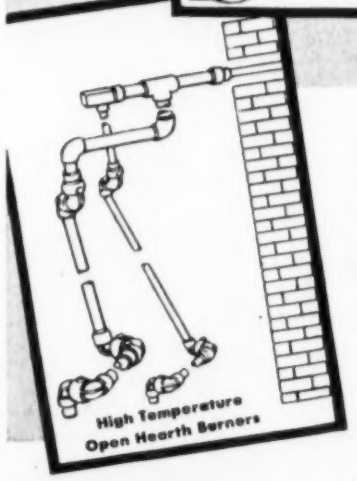
▲ Mention Item NED-1184 when writing ▲

CHIKSAN

BALL BEARING SWIVEL JOINTS

At work





Look around you and you will see CHIKSAN *Ball-Bearing* Swivel Joints at work in many different applications...from low pressure loading and unloading lines to high pressure hydraulic equipment and under high temperatures on boilers and open hearth furnaces. CHIKSAN Swivel Joints are made in over 500 different Types, Styles and Sizes...for pressures from 300 psi to 12,000 psi and temperatures to 500° F....for full 360° rotation in 1, 2 and 3 planes...with threaded or flanged ends or bored for welding.

Write for CHIKSAN CATALOG No. 45.

REPRESENTATIVES IN PRINCIPAL CITIES

EXPORT REPRESENTATIVE: Chiksan Export Co., Brea, California
Branches: New York 7, Houston 2

CHIKSAN BALL BEARING SWIVEL JOINTS FOR ALL PURPOSES — CHIKSAN COMPANY BREA, CALIFORNIA

▲ Mention Item NED-1185 when writing ▲

SELF-BALANCING POTENTIOMETER

CONVERTS SMALL D-C VOLTAGES TO MEASURABLE CURRENTS

Here's a new electronic device that extends the range of conventional indicating and recording instruments so that they can be used for high-sensitivity measurement of low d-c voltages and direct currents. It provides an economical means for making measurements that, heretofore, required complicated and costly equipment. Other applications are: telemetering, temperature measurement, analysis of electronic circuits, and to initiate control when used with sensitive relays.

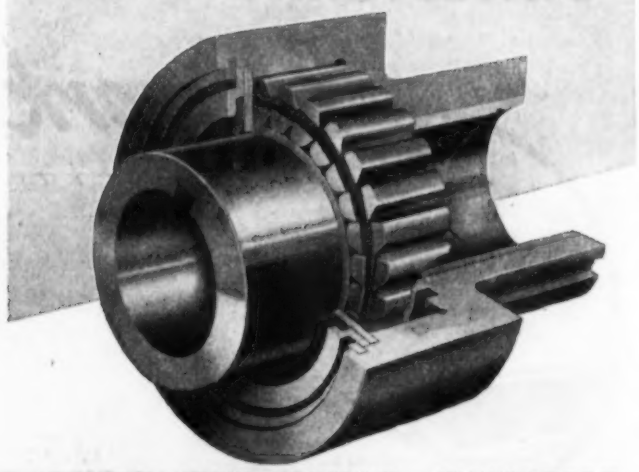
LOW CURRENT DRAIN—Puts no load on the measured circuit.
FULLY AUTOMATIC—Requires no manipulation to obtain balance.
ADJUSTABLE RANGES—Easily changed resistor permits selection of input ranges from 100 microvolts to one volt d-c full scale with five-milliampere output.
RAPID RESPONSE—Circuit balances automatically in approximately one second on 200-microvolt range, faster on higher ranges.
WIDE-RANGE OUTPUT—Permits use of indicating or recording instruments having resistance up to 1500 ohms.

Complete details are listed in Bulletin GEA-4625. Call the nearest General Electric office for your copy or write to *Apparatus Dept., General Electric Co., Schenectady 5, N. Y.* **PRICE $200**

GENERAL ELECTRIC

▲ Mention Item NED-1188 when writing ▲

Do You Need a REALLY GOOD



OVER-RUNNING CLUTCH?

If you have, or may have, an application, let us give you full information about

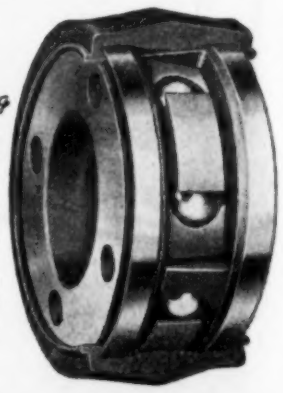
FORMSPRAG
THE FULL COMPLEMENT
Over-Running Clutch

You realize, as do we, that there are many applications where ordinary clutches serve the purpose.

But there are hundreds of applications where you need something better! You may need extremely high torque capacity in limited space. You may need a clutch that cuts in and out hundreds of times a minute. You may require such extreme accuracy in your production that only Formsprag will do the job properly.

If you have a tough application — one that requires that "extra something" — it is well worth while to investigate Formsprag.

BALLFLEX
ANGULAR AND AXIAL
Anti-Friction Flexible Coupling



Ballflex, quickly installed between keyed flanges, accommodates parallel misalignment up to ⅛" and/or angularity up to 3°. It is packed with lubricant for the life of the unit. Flexibility is by mechanical means only. All torque is delivered by hardened steel balls. Free rolling movement in any direction eliminates side thrust and insures long life for both coupler and bearings

Folder On Request

FORMSPRAG Company
1415 JARVIS • FERNDALE, MICH.

▲ Mention Item NED-1189 when writing ▲

New Literature—Continued

ALUMINUM FABRICATION—4-page illustrated technical periodical "Technical Advisor" is published monthly and publicizes latest recommendations regarding most effective uses of aluminum mill products—detailed descriptions are included on production, fabrication and application of aluminum—this service to the metalworking industries will be sent free upon request—issued by Technical Editorial Service, Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.

▲ Mention Item NED-1190 when writing ▲

RIVETING MACHINE APPLICATIONS—Illustrated monthly bulletin "The Townsend Riveter" presents case studies of riveting and applied problems—shows variety of applications to which riveting machines can be adapted—requests to be placed on mailing list should be on company letterhead—issued by H. P. Townsend Mfg. Co., P.O. Box 1206, Hartford 1, Conn.

▲ Mention Item NED-1191 when writing ▲

PETROLEUM PRODUCTS—4-page illustrated folder "Sun 'Job-Proved' Products for Industry" lists and describes cutting, textile processing, rubber processing, refrigeration and diesel oils; general and mine lubricants; solvents; greases and waxes—issued by Sun Oil Co., Industrial Products Dept., Walnut & Seventeenth St., Philadelphia 3, Pa.

▲ Mention Item NED-1192 when writing ▲

SYNCHRONOUS MOTOR STARTERS—Four illustrated bulletins Nos. 1075-B, 1076-B, 1077-A and 1078-A present data on oil-immersed cubicle type, open or enclosed air break type, high voltage cubicle type for starting of 2300-volt motors, and high voltage cubicle type starters for starting 2300 to 4600-volt motors, respectively—issued by Electric Controller & Mfg. Co., 2694 E. 79th St., Cleveland 4, O.

▲ Mention Item NED-1193 when writing ▲

GAGES & THERMOMETERS—20-page illustrated pamphlet on line of industrial gages and thermometers contains data on pressure, vacuum, compound, altitude, hydraulic and ammonia gages; diaphragm attachments; and remote reading and rigid stem dial thermometers—issued by Jas. P. Marsh Corp., 2087 Southport Ave., Chicago 14, Ill.

▲ Mention Item NED-1194 when writing ▲

BUILDING MAINTENANCE MATERIALS—8-page illustrated pamphlet "Stonhard Building Maintenance Materials" discusses use of resurfacing, patching and coating materials in filter plants, incinerators, sewage disposal plants, water works, and power plants—issued by Stonhard Co., 403 N. Broad St., Philadelphia 8, Pa.

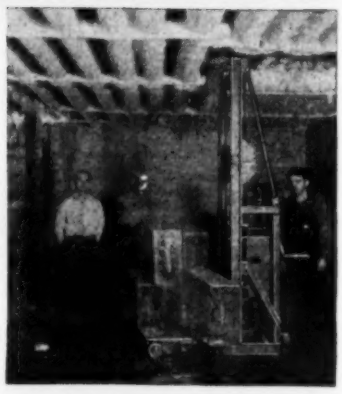
▲ Mention Item NED-1195 when writing ▲

FILTERS—Two illustrated bulletins Nos. 1 and 3 describe many types of clarifying filters and oil removal filters, respectively—former also explains design and applications of Liquon chemical feeders and sludge contract reactor for coagulating and removing suspended impurities which occur in raw water in too great amount to be removed by direct filtration—issued by Liquid Conditioning Corp., 114 E. Price St., Linden, N. J.

▲ Mention Item NED-1196 when writing ▲

REVOLVATOR
REG. U. S. PAT. OFF.
PORTABLE ELEVATORS

ALWAYS ON THE JOB



Rapid Loading of ice with REVOLVATOR Hand Power Model 800 lb. Capacity Size. Other sizes for handling up to 5,000 lb. loads.

Simple, inexpensive hand models save time and labor in hundreds of routine operations. Top is hinged to permit moving through low doorways. Enclosed hoist unit equipped with lowering speed regulator and automatic self-closing brake. Vertical floor lock. Wide faced floor wheels and 180° arc to pull handle make REVOLVATOR as easy to move and maneuver as any lift truck. May be had with revolvable or non-revolvable base and platform type to suit the job.

REVOLVATOR CO.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT
8732 Tonnele Ave. NORTH BERGEN, N. J. Since 1904

▲ Mention Item NED-1197 when writing ▲

Puts it there... Fast!

SERVICE MOTOWLIFT

Tomorrow's Lift Truck... Here Today

Placing loads *exactly* where you want them—quickly, easily and economically—is a simple job with MOTOWLIFT. These fast-action, easy-to-handle fork lift trucks turn in just about 1½ times their own length; are compact (40" wheelbase) for easier loading, moving and stacking in close quarters.

- Gas Powered for 24-hour 3-day Continuous Service
- Wide Range of Models for Handling Various Loads and Lift Heights
- Maneuverability — Short (88") Outside Turning Radius
- Compact—Wheelbase 40"
- Power Plant—Famous 4 Cylinder Ford Tractor Engine

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Summerville 43, Mass.
REPRESENTATIVES IN ALL PRINCIPAL CITIES

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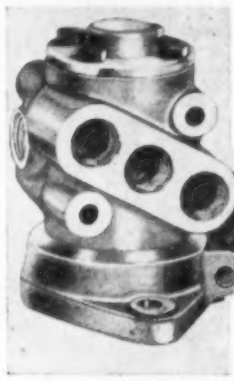

NEW ½ INCH 4 WAY AIR VALVE

FOOT OPERATED

Of IMPROVED ENGINEERING and DESIGN for 5 to 150 P.S.I. service. Compactness permits mounting in smaller areas. FULL FLOW. NO RESTRICTIONS.

FAST, POSITIVE, EASY TO OPERATE

Available in Foot Operated, Lever Operated, Palm Operated, Pin Operated, Air Pilot Operated and Solenoid Operated Models.

Immediate Delivery

PNEUMATICS INCORPORATED
of
PLYMOUTH, INDIANA

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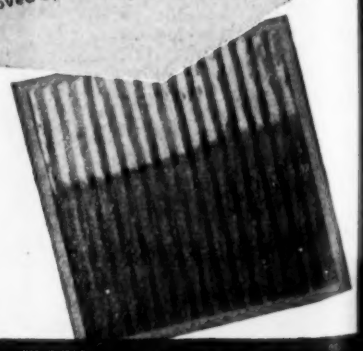
NEW TURCO METHOD
CLEANS AIR FILTERS IN 15 MINUTES!
STOPS FIRE HAZARD—NO ODOR
NON-INJURIOUS TO METAL

With Turco's new method of cleaning air filters, no special equipment or skilled help is needed. A solution of Turco Aktiv is used in a cold tank. The loosened dirt and grease are easily flushed away with cold water hosing. Filter is dried in stream of air. The Turco Aktiv method has been tested and approved by leading air filter manufacturer.



For complete data write Dept. NED-2

Turco
INDUSTRIAL CHEMICAL COMPOUNDS
TURCO PRODUCTS, INC. - Main Office and Factory: 5 S. Central Ave., Los Angeles 1 - Offices and Factories: 1606 Henderson St., Houston 10, Tex. - 125 W. 46th, Chicago 9 - Offices and Warehouses: All Principal Cities

▲ Mention Item NED-1200 when writing ▲

FROM STOCK . . . SUPER MILLING CUTTERS
DESIGNED ESPECIALLY FOR
CAST IRON

AVAILABLE IN ALL STANDARD SIZES

Good news for production men! You can get quick delivery from stock of Super Carbide Tipped Milling Cutters designed especially for cutting cast iron. Available in all standard sizes, these cutters incorporate up-to-the-minute design improvements that cut costs, speed production and improve finishes. Specify SUPER Carbide Tipped Milling Cutters for Cast Iron and see the difference!

OTHER SUPER CARBIDE-TIPPED TOOLS FOR
Drilling
Reaming
Countersinking
Turning

SUPER TOOL COMPANY
Carbide Tipped Tools
21650 Hoover Rd., Detroit 13, Mich. 5210 San Fernando Rd., Glendale 3, Cal.

▲ Mention Item NED-1201 when writing ▲

BETTER THAN EVER!
THE NEW SB1400
MOREHOUSE
HY-R-SPEED
MILL

EASY TO CLEAN!
Quick to Change-over!
The SB1400 is extremely easy to clean and quick to change-over from one type of substance to another. This is one of the many Morehouse features incorporated in the SB1400.

HIGH CAPACITY
mixing—emulsifying—homogenizing
grinding—dispersing—disintegrating

The new SB1400 Morehouse HY-R SPEED Mill is a better HY-R-SPEED Mill than ever—a 5′ x 18″ mill designed to save space in your plant, at the same time giving *more than a gallon-a-minute production!*

With dual bearing mounts, interchangeable parts and a 6-Spline coupling that assures a minimum of vibration and wear on moving parts, the SB1400 Morehouse HY-R-SPEED Mill has a 20 h.p. vertical shaft type motor designed for increased efficiency . . . and it's easily portable! *No special foundation is required to install it.*

If you're interested in better, faster equipment that will save space in your plant, write for FULL INFORMATION!

MOREHOUSE INDUSTRIES
1156 San Fernando Road • Los Angeles 31
Since 1898!

▲ Mention Item NED-1202 when writing ▲

New Literature—Continued

WOOD PLANER—8-page illustrated brochure "The Drill Press as a Planer" discusses Multi-Purpose wood planer which can perform number of operations such as surface planing, routing, rabbeting, tenoning and step paneling without single change in blade adjustment—planer fits chuck of any standard drill press—issued by Barron Tool Co., 415 Brainard St., Detroit 1, Mich.

▲ Mention Item NED-1203 when writing ▲

DOUBLE ROLL CRUSHERS—8-page illustrated bulletin No. 794 contains data on double roll crushers which are particularly suited to breaking down of various friable materials of medium hardness such as coal, coke, burned lime, chemicals, cinders, dry clay and medium hard shales—disintegrators and coke sizers are covered also—issued by Jeffrey Mfg. Co., 852-99 N. Fourth St., Columbus 16, O.

▲ Mention Item NED-1204 when writing ▲

CHEMICAL FEED SYSTEMS—16-page illustrated technical paper No. 54 is reprint of article "Electronics in Automatic Chemical Feed Systems" by Robert T. Sheen—discusses use of electronics and controlled volume pumps in chemical feed systems which have been applied to treating process water, municipal water supply, cooling water, boiler feed water, continuous processing and other operations—issued by Milton Roy Co., 1304 E. Mermaid Ave., Philadelphia 18, Pa.

▲ Mention Item NED-1205 when writing ▲

LIGHTING EQUIPMENT RESEARCH—16-page illustrated booklet "45 Years of Progress in Lighting" describes and shows electrical sections, physical test section, photometric section, acoustical test section, model shop and other activities of research laboratory—sample products and installations are portrayed—issued by Benjamin Electric Mfg. Co., Des Plaines, Ill.

▲ Mention Item NED-1206 when writing ▲

LIGHTING EQUIPMENT ACCESSORIES—84-page 1947 catalog includes complete information, price lists, dimension and application diagrams and installation illustrations of hangers, shock absorbers, suspension devices and accessory items for lighting equipment—issued by Thompson Electric Co., 1101-11 Power Ave., Cleveland 14, O.

▲ Mention Item NED-1207 when writing ▲

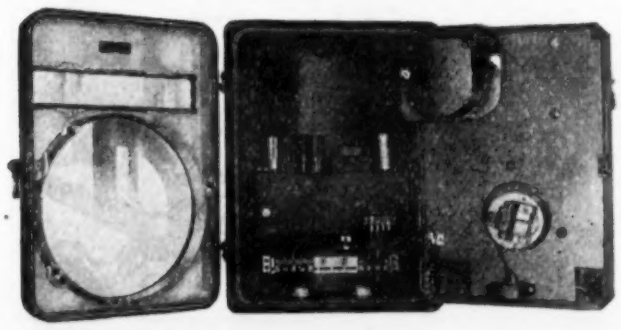
CONSTRUCTION MATERIALS—96-page illustrated manual "Horn Construction Data and Handbook" gives technical information on flooring materials, exterior and interior coatings, roofing materials, waterproofings, dampproofings and admixtures—conversion factors, estimating data, weights and strengths are tabulated—issued by A. C. Horn Co., 43-36 Tenth St., Long Island City 1, N. Y.

▲ Mention Item NED-1208 when writing ▲

HYDRAULIC PALLET LIFT TRUCK—Illustrated folder No. 220 shows details of hydraulic pallet lift truck for double-face and single-face pallets—illustrations demonstrate method of operation with pallets, recommended pallet construction and adaptability of various materials to palletizing—issued by LYON-Raymond Corp., 3129 Madison St., Greene, N. Y.

▲ Mention Item NED-1209 when writing ▲

Now . . . More Accurate
ELECTRONICALLY!



NEW BRISTOL DYNAMASTER
Electronic Resistance Thermometer
Operates on the null balance principle . . . uses standard vacuum tubes . . . needs no levelling . . . gives super-sensitivity . . . extreme accuracy −150°F. to +400°F. . . . high speed. Write for Bulletin R900 for complete story.
THE BRISTOL COMPANY, 108 Bristol Road, Waterbury, Conn.
BRISTOL
Engineers process control for better products and profits
AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

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Rubyfluid
a BETTER soldering FLUX for a BETTER Job

Fast acting, easy to use, economical Rubyfluid Flux makes possible the *Perfect* soldering job. Rubyfluid wets out freely, conditions metal for a solid solder bite, and has no harmful fumes or objectionable odors.

Try Rubyfluid paste or liquid flux just once and you'll be another Rubyfluid customer.

Ruby's Stainless Steel flux requires no special equipment or excessive heat. The formula is approved by the makers of Stainless Steel.

See your jobber or write direct.

RUBY CHEMICAL CO.
72 McDowell St. Columbus 8, O.

Rubyfluid

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FELT
Cuts With a Clean Non-Fray Edge

Felt does not ravel, shred or fray — cuts with a fine, clean edge — is frequently ready for assembly after being shaped by a single elementary operation.
It can be processed to almost any consistency — from the softness of a puppy's ear to the hardness of a seasoned maple board. It can be punched, chiseled, ground or otherwise worked.
The Felters Precision Cut Felt Parts Manual makes ordering easy — insures prompt, accurate deliveries. Write to The Felters Company, 210-M South Street, Boston 11, Massachusetts.
Offices: New York, Philadelphia, Chicago, Detroit.
Sales Representatives: San Francisco, St. Louis.
Mills: Johnson City, New York; Millbury, Massachusetts; Jackson, Michigan.

THE FELTERS COMPANY
Makers of the Felt for the Parts it Cuts

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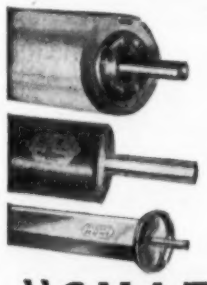
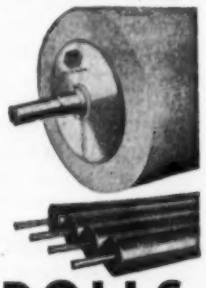
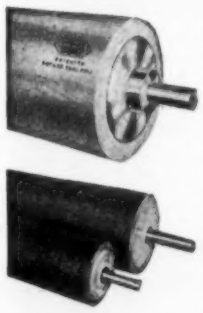


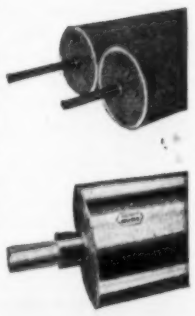
MANY INDUSTRIAL ROLL PROBLEMS are solved by using

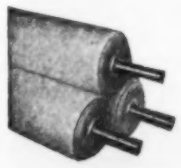


"SHAF-TITE" ROLLS

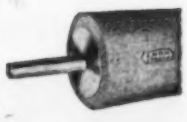


Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel, plastic, etc. Whatever your roll problem, put it up to





RODNEY HUNT
SEND FOR CATALOG TODAY!
RODNEY HUNT MACHINE CO.
73 Maple Street, Orange, Mass.



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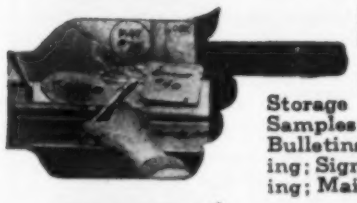
BETTER MARKING ON ANY SURFACE

CADO **FLO-MASTER** CADO

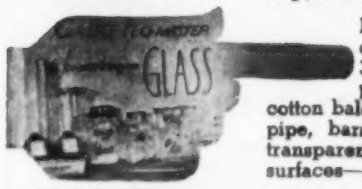
Automatic Valve Controlled

FOUNTNBRUSH

Pocket FLO-MASTER *Writes* like a pen, *Marks* like a crayon, *Draws* like a pencil and *Paints* like a brush—on any surface, wet or dry. Leakproof, floodproof, sweatproof. Use with Cado Inks—Black and 7 colors—waterproof, instant drying.



Hundreds of practical uses including: Layouts; Templet marking; Shipping; Records; Storage marking; Blueprints; Samples; Inspection; X-Rays; Bulletins; Labelling; Stock marking; Signs; Samples; Parts marking; Maintenance marking.



FLO-MASTER writes small or large—stroke 1/16 to 3/8" wide. Marks on paper, wood, metal, burlap, cotton bales, cartons, girders, beams, pipe, bars, etc. Both opaque and transparent inks for dark and light surfaces—including asphalt coatings.

FLO-MASTER is unconditionally guaranteed when used with Cado Inks

Available At Leading Mill Supply and Hardware Houses or Write Us

CUSHMAN & DENISON MFG. CO.

135 W. 23rd ST. NEW YORK 11, N. Y.

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Send for Sample of

LIQUID ENVELOPE

PEELABLE PLASTIC FILM THAT CUTS METAL-WORKING COSTS

"Liquid Envelope" eliminates die marks, surface scratches, etc. caused by Pressing, Drawing, Spinning, Brake Bending, Forming, Welding and Assembly.

.001"—.002" film protects Stainless, Cold Rolled, Monel, Aluminum, Magnesium, Brass, Copper Sheet or Strip . . . cushions dies . . . lengthens die life . . . reduces pressures . . . cuts scrap . . . saves polishing-out imperfections . . . protects work in process.

Easy to cold-spray and peel off. Gallon covers up to 200 square feet. Special formulations for protection of baked enamel and porcelain during shipment.

COATED STAINLESS SHEETS AVAILABLE from Eastern Stainless Steel Corp., Baltimore, Md., exclusive producers of Blue "Liquid Envelope" Coated Sheets.

ALSO AVAILABLE FOR USE IN YOUR SHOP for spray, dip, brush or roller-coat application from: Edgcomb Steel Corp., Hillside, N. J. • Edgcomb Steel Co. of New England, Inc., Milford, Conn. • Hugh Russel & Sons, Montreal and Toronto, Canada • Tanner & Co., Indianapolis, Ind. • Chicago Steel Service, Chicago, Ill. • The Hamilton Steel Co., Cleveland, O. • Geary Stainless Steel Co., Baltimore, Md. • Metal Goods Corp., St. Louis, Mo.

FREE—STAINLESS STEEL ASH TRAY stamped from blank coated with "LIQUID ENVELOPE"—demonstrates how this amazing plastic film protects polished sheet. Use coupon—or write direct.

BETTER FINISHES AND COATINGS, INC.

268 DOREMUS AVE., NEWARK 5, N. J.

▲ Mention Item NED-1215 when writing ▲

New Literature—Continued

ENGINE REFRIGERATION UNIT—12-page illustrated booklet "Engined-Refrigeration by Ready-Power" describes complete compact engine compressor units and engine condensing units, designed for stationary, portable or marine operations, providing adequate dependable refrigeration for any purpose—units feature direct drive, unloaded starting and automatic control—issued by Ready-Power Co., 11231 Freud Ave., Detroit 14, Mich.

▲ Mention Item NED-1216 when writing ▲

SPEED LATHES & COLLET ATTACHMENTS—12-page illustrated catalog No. 46-1 describes features and operation of various models of Vacuum-Grip speed lathe for odd shaped parts that cannot be held by chuck or collet, tool post turrets equipped with cutting-off tool and holder, collet attachments, collets and surface plates—issued by Crozier Machine Tool Co., 684 N. Prairie Ave., Hawthorne, Calif.

▲ Mention Item NED-1217 when writing ▲

CHEMICAL PUMPS—10-page illustrated bulletin Form 7095 discusses pumps designed to handle many liquids and wide range of capacities—all parts which come in contact with liquid being pumped are constructed of Ircamet corrosive-resistant alloy—performance and dimensional data are tabulated—issued by Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

▲ Mention Item NED-1218 when writing ▲

RADIANT HEATING—472-page illustrated book "Radiant Heating" by T. Napier Adlam thoroughly covers design, installation and control of hot water, steam, warm air and electric radiant heating systems for buildings—related subjects of snow melting and radiant cooling are discussed in detail—charts for determining pipe size and spacing for many types of floor and ceiling construction are included—data resulting from tests on effect of floor coverings are presented—price is $6—published by Industrial Press, 148 Lafayette St., New York 13, N. Y.

▲ Mention Item NED-1219 when writing ▲

PAPERS—8-page illustrated pamphlet "Paper Has a Fourth Dimension" presents information on qualities obtainable in paper—several case histories are quoted and types of paper covered—issued by Central Paper Co., 2400 Lakeshore Dr., Muskegon, Mich.

▲ Mention Item NED-1220 when writing ▲

ALUMINUM BUILDING WIRE—6-page illustrated bulletin No. H-407 and inserts present technical data on aluminum building wire supplied with Performite type RH insulation with conductor temperature rating of 75 C.—price list is included—issued by Hazard Insulated Wire Works Div., Okonite Co., Wilkes-Barre, Pa.

▲ Mention Item NED-1221 when writing ▲

PUMP GOVERNORS—16-page illustrated bulletin No. 463 presents construction details of bronze and steel governors for control of reciprocating, turbine and motor driven pumps—capacity tables are included to aid in selection of proper pump governor for specific applications—installation and operation instructions are given—issued by Leslie Co., 119 Delafield Ave., Lyndhurst, N. J.

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EVERY ONE A "CHAMPION"

CHAMPION

ADJUSTABLE STEEL RACKS

SAVE TIME, LABOR AND SPACE

Slash materials handling costs and make selection easier by storing bar stock, pipe, jigs, fixtures, etc., on these sturdy CHAMPION Racks. Side-lift of *inches* instead of end-haul of *feet* means shop space-saving too. Rugged grey iron arms 12" and 24" (single or double type) bolt to any standard 2" pipe. Adjust to any height. You supply the pipe; CHAMPION the arms, base, clamp, and ceiling collar. CHAMPIONS also made in heavy-duty single unit racks. For practical, low-cost racks, choose CHAMPIONS. Write today for details and prices.

The WESTERN Tool and Manufacturing Co. Inc. SPRINGFIELD, OHIO

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The Little Hoist with the **"BIG LIFT"**

are not only the Lightest—Smallest—Strongest and most Accessible.

(Removal of just four bolts makes any one of its three units accessible) but have a Lift Speed of 21½' per min. with 1 ton, and 43' per min. on ¼ and ½ ton loads.

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ACADIA

Synthetic Products

SHEETS • EXTRUSIONS

CUT PARTS • MOLDED PRODUCTS

Gaskets and seals processed from Acadia Synthetics make perfect high pressure closures—water-tight, oil-tight, air-tight, gas-tight—and invariably at lower cost.

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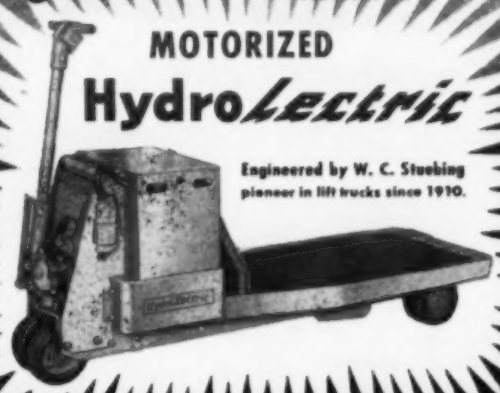

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Regardless of the product you make, be it mouse-trap or paper goods, glassware or castings, HydroLectrics can give your production a lift. In manufacturing or distribution . .. where dependability and economy count . . . HydroLectrics pay off! For fleet users, these rugged trucks have paid for themselves several times over in one year. Write for folder G.

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New Equipment Digest is published monthly by Equipment Digest Publishing Co., Penton Building, Cleveland, Ohio, G. O. Hays, President, J. R. Dawley, F. O. Rice, J. H. Robison, Vice Presidents, E. L. Shaner, Treasurer, E. L. Werner, Secretary

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February, 1947

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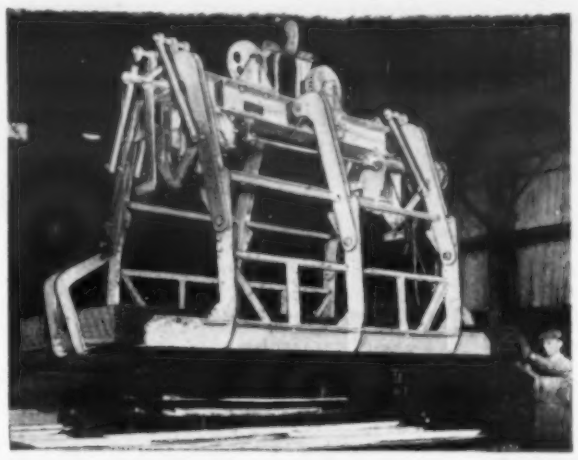

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MULTI-DRILL

DRILL 6 or 8 HOLES AT ONE STROKE IN ANY PATTERN WITH MULTI-DRILL

Fits ANY Drill Press

The new 8-Spindle unit in the MULTI-DRILL line brings your single spindle tools even greater production capacity and wider operating range. Now you can drill 8 holes at one stroke in *any* hole pattern on or within 9" circles—½" center distance, . . . drill sizes 1-32" to 3-8". All the features which made MULTI-DRILLS preferred tools are built in . . . fast, easy positioning of locating arms . . . heavy duty, long-life universal joints . . . "oilite" lifetime bearings . . . precision collet spindle assemblies and rugged construction which assures long trouble-free service. The 6-Spindle MULTI-DRILL handles any hole pattern on or within 5" circles—½" min. centers.

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4220 W. Kinzie Street • Chicago 24, Ill.
Telephone SACramento 4545

ADJUSTABLE TO ANY DESIGN

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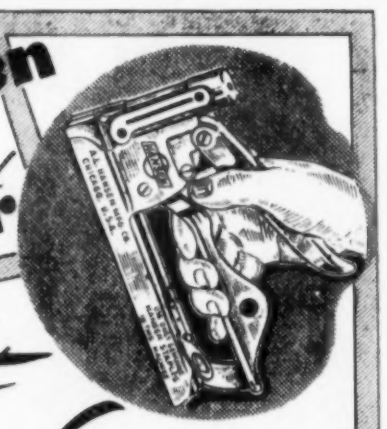

Fast Efficient- Economical

COMPACT, perfectly balanced, easy to grip and operate, the HANSEN Tacker is held in one hand, materials in other, and tacks fast as you grip. Self-contained. Ready for instant, continual use.

Precision made quality staples, contained in the Hansen BLUE BOX, teamwork with these handy, modern units. Hansen Staples comprise eighty different lengths and widths—for tacking, fastening and assembling.

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DOORS that SEE and ACT

save time . . . speed traffic . . . pay profits in busy industrial plants . . . Yours, too?

● Install Stanley Magic Doors where constant inter-department traffic, preservation of heat, humidity or air-conditioning are vital. Electric eye actuated, swing or slide action, they open at approach, close after passage. They save worker time, speed traffic, reduce breakage, cut door repair costs. Write for more information. The Stanley Works, Magic Door Div., New Britain, Connecticut.

STANLEY
MAGIC DOORS
Require No Hand To Open

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CLECO GRINDERS ARE Packed with Power!

● In addition to their remarkable power, Cleco Rotary Grinders operate *vibration-free at all times*—due to the perfect balance of the alloy steel rotors which are heat treated and ground to exact size. Air is admitted under *each* blade throughout its power sector—insuring immediate starting even under load. The governor is set so that at 80-lb. gauge pressure it holds the grinder safely at its most effective speed. The tool automatically shuts off if governor should break—an important safety feature.

Cleco Grinders are available in many sizes and speeds for every wheel size and grinding condition. *Write for Bulletin 80 on Cleco Grinders.*

No. 860 Models illustrated—all series available with these straight or spade handles.

THE CLEVELAND PNEUMATIC TOOL CO.
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DISTRIBUTORS IN ALL PRINCIPAL CITIES

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Write Bucket Headquarters

Whatever the job, Blaw-Knox provides a bucket that gets more work done with less crane time . . . Over 100 types and sizes! Write for Catalog 1757.

BLAW-KNOX DIVISION of Blaw-Knox Company
2068 Farmers Bank Bldg., Pittsburgh, Pa.

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Save 3 ways with... KRW ARBOR PRESSES

1 You name the job, and we'll name the KRW Press best fitted to do it better, faster, and at lower cost. Take KRW Hand-operated presses for example: they give more power with less effort... combining faster ram travel with a quick-acting finger controlled valve that makes the KRW Press outstanding in efficient hydraulic action. Twin pumps enable operator to vary ram speed. The special "Capstan" type handwheel brings the ram to the work fast as well as providing a "built-in" mechanical press for the lighter jobs. 30 days delivery guaranteed. Write for prices and catalog.

2 KRW Hydraulic Presses equipped with our "Speedi-Booster" operate on compressed air, providing tons of pressure at the ram by effortlessly raising or lowering the operating lever. In operation, compressed air enters an air cylinder, the piston of which drives the smaller hydraulic oil piston which, in turn, forces the oil under pressure to the large cylinder piston. Tonnage pressures are dependent upon initial air pressure and size of air and oil cylinders. 30 days delivery.

3 Here is a self-contained power unit that drives KRW Hydraulic Presses. These units can be purchased separately to drive any existing KRW Press. The KRW Motor Driven Hydraulic Presses are low-cost, production units ideally suited for short runs or small work.
Presses are equipped with Seco Radial type pumps in capacities ranging from 3,000 to 10,000 PSI. Guaranteed by both the manufacturer and K. R. Wilson. Write for prices.

K. R. WILSON
215 MAIN ST., BUFFALO 3, N.Y.

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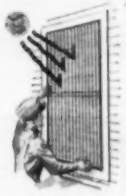
PLAN NOW FOR Cool Comfort NEXT SUMMER

KOOLSHADE* SUN SCREEN

BLOCKS SUN HEAT RAYS *Outside* THE WINDOW



KoolShade is the most efficient of all shading devices! Up to 90% of sun heat rays are blocked and radiated outside the window. Sun-exposed rooms stay as much as 15 degrees cooler, yet the vision is not cut off or blurred.

KoolShade cuts air conditioning costs, too, by reducing the load on present equipment, thus lowering electricity and maintenance costs. On new installations an excellent cooling job can be done with lighter, less expensive equipment if KoolShade is used on all sun-exposed windows.

NOTE THESE VALUABLE FEATURES

- *Permanently set at 17° angle for shading efficiency.*
- *Prevents fading of valuable drapes and furnishings.*
- *Easy and inexpensive to install—no rust, rot or rattle.*
- *Fits smoothly into modern architectural design.*
- *Durable bronze KoolShade is effective as insect screen.*

Ingersoll KOOLSHADE* SUN SCREEN

*Trade Mark Property of
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BORG-WARNER CORP.

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Borg-Warner Corp., Dept. G2
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Please send free sample and literature.
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BW PRODUCT OF BORG-WARNER

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3800 Plants use this faster gage

Priced from $9.75 up.

"Double the speed of our former gages." "10 million pieces without a rejection." "Low fatigue factor... fewer errors by inexperienced operators because they can SEE the big indicator so clearly." "Extremely accurate."

Users back up these reports with re-orders for scores and even hundreds of additional TRICO MICRO-CHEKS, the modern precision comparator gage of a thousand-and-one uses. Send for booklet which illustrates many applications.

TRICO Micro-Chek
Trico Products Corporation
Buffalo 3, N. Y.

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... Steel Strapping for All Shipping Protection

○ District Offices
● Other Branches
Agencies in 29 Foreign Countries

Forty-one branch offices—provide fast, nation-wide service on tools, steel strapping and seals—the basic elements in Signode's complete system of PLANNED PROTECTION for all types of shipping containers. The Signode SYSTEM cuts transit damage and helps to reduce shipping expense.

A Signode engineer will offer suggestions in terms of your own problems.

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SIGNODE STEEL STRAPPING CO.
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378 Furman St., Brooklyn 2, N. Y.
467 Bryant St., San Francisco 7, Calif.

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SABIN BARREL TRUCK Cuts Handling Cost

ONE MAN handles up to 800 lbs.-- without helpers

Write for BULLETIN 45

Save both time and labor, and make work lighter for your trucker, by furnishing him with a Type L-3 Sabin Truck—built especially for barrels and drums. EASY TO HANDLE. He simply runs truck up to container, hooks on at top and pulls back on the handle to lift load. Exclusive Third-Wheel Feature insures better balance and permits loaded truck to stand alone.

THE SABIN MACHINE CO.
6536 Carnegie Ave. Cleveland 3, Ohio

ALSO TOTE PAN, BOX, CARBOY, KEG TRUCKS!

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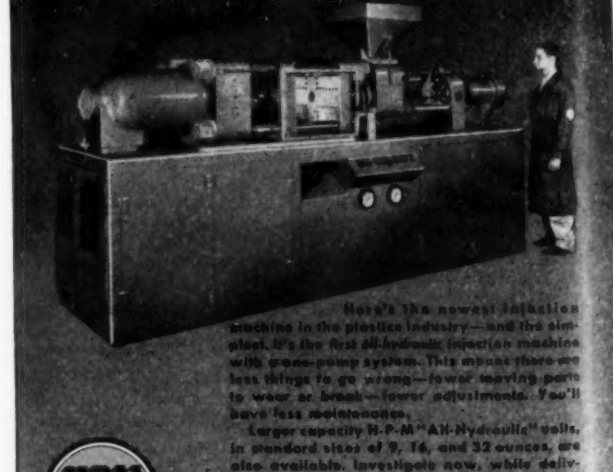
FASTER • SIMPLER • QUIET!

The New H-P-M All-Hydraulic 4-oz. Injection Molding Machine



Here's the newest injection machine in the plastics industry—and the simplest. It's the first all-hydraulic injection machine with crane-pump system. This means there are less things to go wrong—fewer moving parts to wear or break—fewer adjustments. You'll have less maintenance.

Larger capacity H-P-M "All-Hydraulic" units, in standard sizes of 9, 16, and 32 ounces, are also available. Investigate now, while deliveries are favorable. For complete details on the new 4 oz. machine, write for Bulletin 4701.

HPM All-Hydraulic PLASTICS MOLDING PRESSES
COMPRESSION • INJECTION • TRANSFER • LAMINATING
THE HYDRAULIC PRESS MFG. COMPANY • Mount Gilead, Ohio, U. S. A.

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STOP COSTLY LEAKS!

SEAL PIPE JOINTS with KEY-TITE

Pipe joints once sealed with Key-Tite do not leak, yet they can be easily opened because Key-Tite does not freeze the connection. It contains no lead nor lead substitutes and does not affect the taste or odor of potable liquids. Key-Tite prevents leaks on all lines carrying water, gas, low-pressure steam, compressed air, etc.

Send for Free Sample — test Key-Tite in your own plant at no cost to you.

KEY Company

2601 McCasland Ave., East St. Louis, Illinois

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FACTS YOU SHOULD KNOW

"Unbrako" Socket Screws are exceedingly strong, very uniform and therefore dependable—and being made from the finest alloy material—they fill the exacting needs of engineers and mechanics.

"Unbrako" Socket Cap Screws have knurled slip-proof heads—so that they can be screwed in faster and farther, before a wrench is used.

"Unbrako" Socket Set Screws have knurled cup points which make them "self-lockers"—the points dig-in and refuse to budge, regardless of the most chattering vibration.

"Unbrako" Socket Screws have proven so superior that they are being adopted more and more by industry as a whole.

Write for a copy of the "Unbrako" catalog of Socket Screw Products.

KEY KIT

You can't screw socket screws in or out, without a hex socket wrench,—so why not get our No. 25 or No. 50 "Hallowell" Hollow Handle Key Kit which contains most all hex bits.

Knurling of Socket Screws originated with "Unbrako" in 1934.

OVER 43 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. Box 581

Boston Chicago Detroit Indianapolis St. Louis San Francisco

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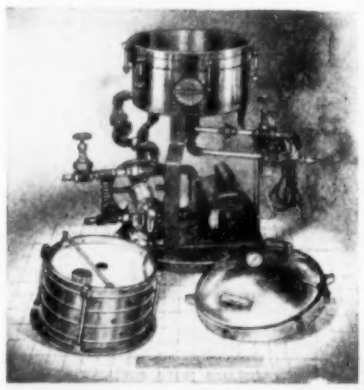

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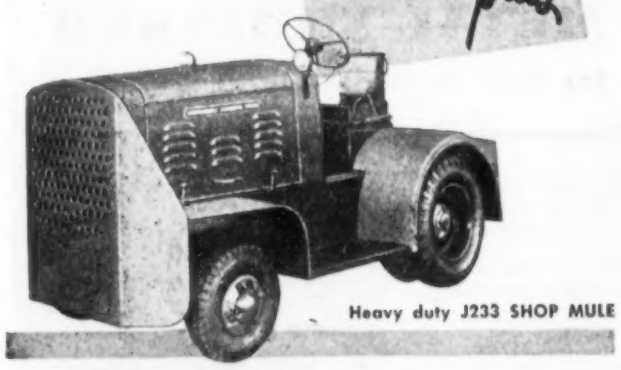

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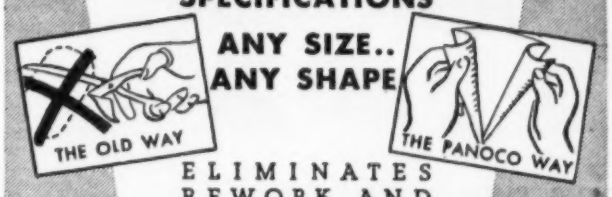

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PORTABLE SAFETY DIVISION
Portable Products Corporation
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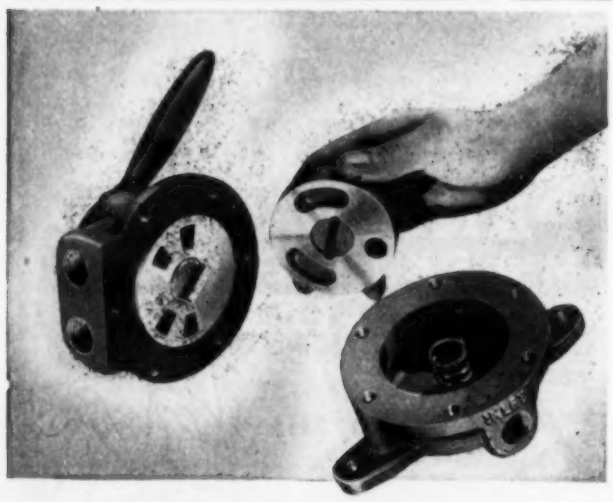

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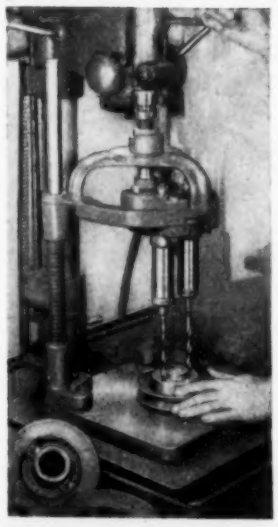
USERS SAY:
Production UP . . . Costs DOWN!



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That's what you hear from the machinist who has been beset by the annoying (and frequently expensive) mishap of the broken tap and has found the solution in the use of the simple, effective, safe Walton Tap Extractors.
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Get SMOOTH SURFACES for Accurate Layout Work

. . . USE SIMONDS
"RED STREAK" Precision-Finished
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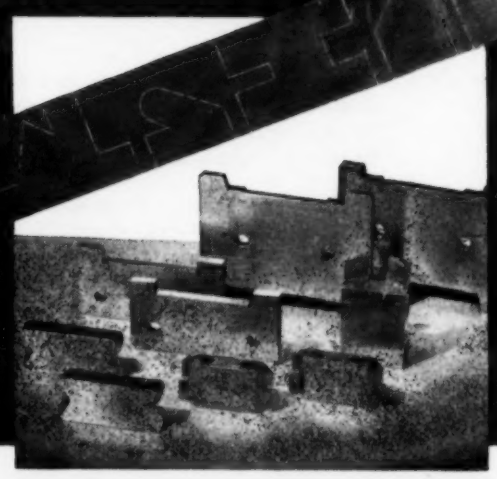

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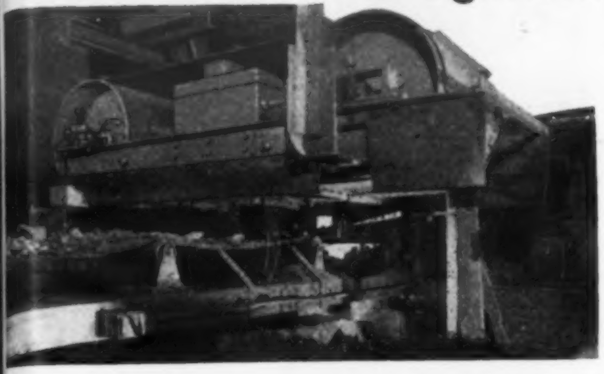
DINGS Self-Cleaning Magnets



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MILWAUKEE 14, WIS.

Dings MAGNETIC SEPARATION HIGH INTENSITY

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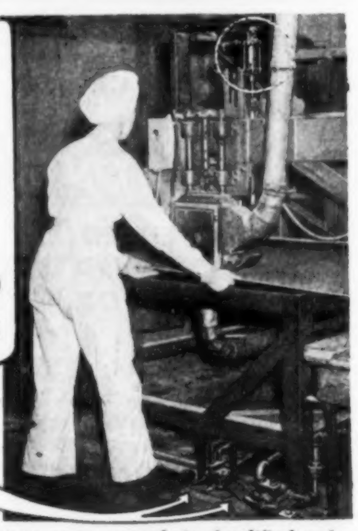
FOOT-CONTROL *Speeds* DEFECT-CUTTING in Veneer Plant



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GALLAND-HENNING MFG. CO., 2755 S. 31st St., Milwaukee 7, Wis.

Production Men: this application may suggest how operating cycles of certain machines in your plant can be speeded up.

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

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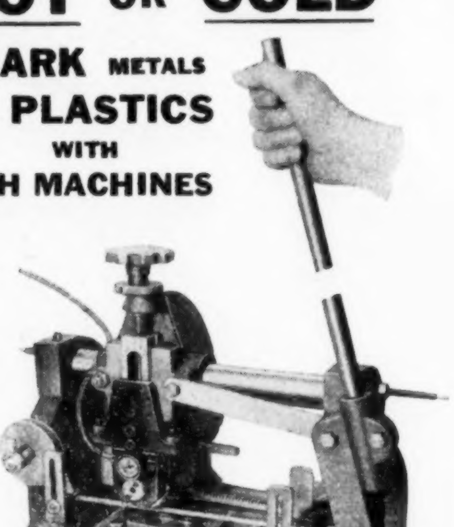
MARK METALS OR PLASTICS WITH 9AH MACHINES



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The ACROMARK Company
7-11 MORRELL ST., ELIZABETH 4, N. J.

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Safe Hands *plus* Easier Work

Neoprene

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With Amazing New Non-Slip Fingers

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Synthetic Rubber Division

STANZOIL PIONEER

THE PIONEER RUBBER COMPANY
248 Tiffin Rd., Willard, Ohio, U. S. A.
Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

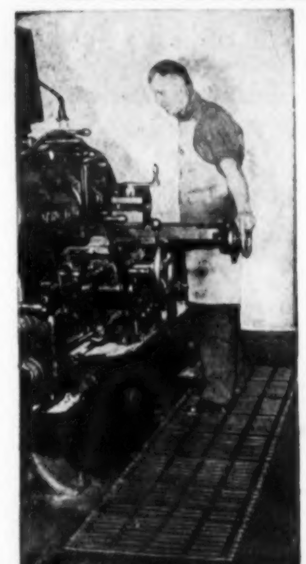
▲ Mention Item NED-1256 when writing ▲

The multiple advantages of *coiling upward action* have won industry-wide preference for Kinnear Rolling Doors in plants of all sizes and types, old or new. By coiling above the lintel, Kinnear Rolling Doors save *usable space* . . . open out of reach of damage . . . clear *the entire doorway!* Kinnear's interlocking-steel-slat curtain gives extra protection against fire, intrusion, accidental damage, and the elements. Kinnear Motor Operators and remote control stations may be added. Built in any size, for old or new construction. Write!

The KINNEAR MFG. CO.
Factories: 3017 Fields Ave., Cols. 16, Ohio; 1742 Yosemite Ave., San Francisco 24, Calif.

KINNEAR ROLLING DOORS

▲ Mention Item NED-1257 when writing ▲



The ONLY Successful OIL and GREASE RESISTANT MATTING
Neo-Cord Counter-Tred
Contains no rubber
Made with Dupont Neoprene

Tuf-Tred Superior Grade Tire Fabric Matting

A long-wearing mat for promoting safety and providing comfort. Beveled nosing on all sides. For use around machinery, on ramps, wet floors and in shower and locker rooms. ⅝" thick, up to 6' wide, any length.

AMERICAN Counter-Tred MATTING

A tough, durable, long wearing rubber and cord matting with a resilient non-slip surface that affords safety in wet or slippery areas. Ridged bottom affords aeration and drainage. Easily handled for cleaning. Adheres perfectly to the floor. Keeps the feet dry. ⅜" thick, 24" wide, any length.

—AMERIFLEX— Flexible Hard Wood Link Matting

Links are held on galvanized steel springwire framework. Lies flat. Follows contour of the floor. Beveled edges. Can be rolled or folded.

"WALRUS HIDE" Roll-Rubber Matting

36" wide, ⅛" thick, approx. 50 yards long.
Write for prices and folder, "A Mat for Every Purpose", describing matting for promoting safety, providing comfort, reducing fatigue and furthering sanitation.

AMERICAN MAT CORPORATION
"America's Largest Matting Specialists"
1733 Adams Street
Toledo 2, Ohio

▲ Mention Item NED-1258 when writing ▲

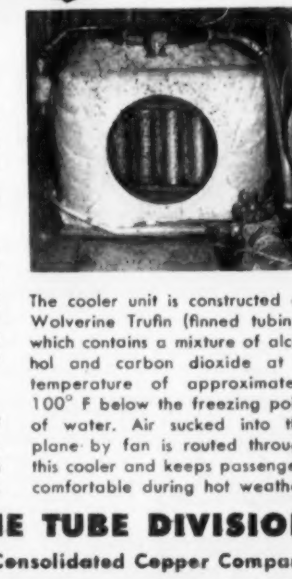
WOLVERINE TRUFIN gives

. . . as it keeps passengers comfortably cool in Douglas airplanes

The new Douglas DC-4s, as a result of successful tests, will be equipped with cooling units which will keep temperatures in cabin interiors down to a comfortable degree in hot weather. Wolverine Trufin forms an essential part of this recent development.

Trufin all one-piece, aluminum finned tube is ideal for aircraft use in heat exchangers. The heat transfer coefficient is high, thereby reducing the required surface area and ultimately saving volume and weight. Because the fins are integral with the tube itself, Trufin resists vibrations and retains its efficiency.

This illustrates another application of Wolverine Trufin, again demonstrating the high performance values this unique tube delivers in compact space.



The cooler unit is constructed of Wolverine Trufin (finned tubing) which contains a mixture of alcohol and carbon dioxide at a temperature of approximately 100° F below the freezing point of water. Air sucked into the plane by fan is routed through this cooler and keeps passengers comfortable during hot weather.

WOLVERINE TUBE DIVISION
Calumet & Hecla Consolidated Copper Company
1411 CENTRAL AVENUE • DETROIT 9, MICH.

▲ Mention Item NED-1259 when writing ▲

HYDROSEAL PRINCIPLE
Clear water follows path of arrows at a pressure higher than the pump discharge, entirely filling the annular clearance between impeller and pump side plates. Abrasive solution cannot enter this clearance, thus high efficiency is developed and maintained.

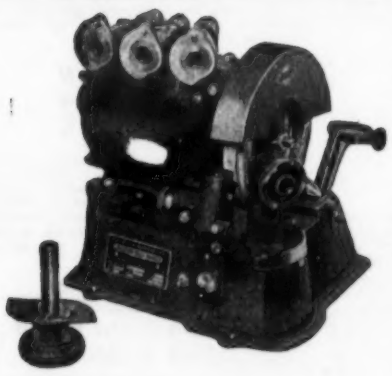
HYDROSEAL PUMPS
Capacities from 10 GPM to 7000 GPM. Belt Driven, Direct Connected Motor Driven and Overhead Motor Driven Types.

Abrasives Materials Pumped With 1/3 to 1/2 Less Power

Thousands of Hydroseal Pumps are now operating under what seems to be every conceivable pumping condition. Hydrosealing saves power, while Maximix Rubber Pumping Parts outlast equivalent metal parts, 4 to 6 times or more. This means economy under the most difficult conditions. Maximix Parts are easily replaced in the field, without vulcanizing. Send for Bulletin 140. ***The Allen-Sherman-Hoff Co., 1429 Locust St., Phila. 2, Pa. Representatives in Most Principal Cities.***

▲ Mention Item NED-1261 when writing ▲

BLACK DIAMOND
PRECISION DRILL GRINDER



TOOLS BLACK DIAMOND GRINDERS

NO OTHER SMALL DRILL GRINDER CAN EQUAL THE EFFICIENCY OF A BLACK DIAMOND!

TO save time and skilled labor and keep all small wire and fractional drills always ahead of production demands is the job of a Black Diamond Drill Grinder.

There is no need to pay skilled labor for grinding small drills when any unskilled person can operate this machine at minimum wage and keep all drills properly ground with uniform lips, at the proper angle and with correct clearance for fast cutting.

Black Diamond grinding insures precision drilling, reduces drill breakage, saves expensive drill stock and cuts grinding time and expense to the bone.

Moderately priced, a Black Diamond Grinder will actually pay for itself in savings, in a few months, wherever small drills are used singly or in gangs. Write for new bulletin today.

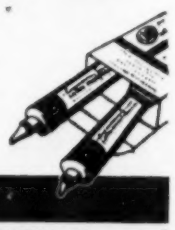
BLACK DIAMOND SAW & MACHINE WORKS, INC.
NATICK, MASSACHUSETTS

▲ Mention Item NED-1262 when writing ▲

PREVENT DANGEROUS Work Seizure!

For SAFETY—Use Only
CMD *Anti-Scoring* CENTER POINT OIL

To avoid personal injury, ruined work, and costly delays, lubricate centers, steady rests, cams and other machine parts with CMD Center Point Oil. It withstands pressure greater than 50,000 lbs. per square inch. Try it free! See for yourself!



Mail Coupon Now!

FREE TEST KIT

CHICAGO MANUFACTURING & DISTRIBUTING CO.
Dept. 2NED 1928 West 46th Street, Chicago 9, Illinois
Without obligation, please send us a free test kit of one tube of CMD Center Point Oil and one tube of CMD Center Point Lube. Also, send 4-page folder on 30 uses for CMD lubricants.
NAME.....
COMPANY NAME.....
ADDRESS.....

▲ Mention Item NED-1263 when writing ▲

New Literature—Continued

RUBBER LINED PIPE & FITTINGS—8-page illustrated catalog section No. 9780 presents information on pipe and fittings lined with various grades of soft and hard rubber by Vulcalock process—attaches rubber directly to steel with adhesion which is practically integral—pipe and fittings are especially adapted for resisting corrosion and abrasion and preventing contamination of liquids—issued by B. F. Goodrich Co., Dept. E, 500 S. Main St., Akron, O.

▲ Mention Item NED-1264 when writing ▲

STEAM COOKING EQUIPMENT—28-page illustrated brochure "Cooking with Steam" covers evolution of steam cookers, importance of steam cooking, preparation and cooking, time tables for cooking various types of foods, canning procedure, purchasing guide, terminology, vitamin chart, tables of weights, measures and pressures, etc.,—available upon letterhead request—issued by Market Forge Co., 54 Garvey St., Everett 49, Mass.

▲ Mention Item NED-1265 when writing ▲

FLOORING MATERIAL—Illustrated bulletin No. 603 presents case histories of reduction of floor maintenance costs through use of Emeri-Crete flooring which is simply mixed with cement and water to produce durable flooring—it withstands heavy duty service, is unaffected by heat and is resistant to lactic acids, organic wastes, moisture, steam and other materials—issued by Walter Maguire Co., 330 W. 42nd St., New York 18, N. Y.

▲ Mention Item NED-1266 when writing ▲

CORROSION RESISTANT FANS—12-page illustrated bulletin No. 1102 gives complete engineering data on five standard sizes of corrosion resistant fans for exhausting acid and other corrosive fumes—describes Duriron, Durichlor and Durimet alloys of which fans can be built—issued by Duriron Co., Dayton 1, O.

▲ Mention Item NED-1267 when writing ▲

AUTOMATIC CLAMPING—12-page illustrated booklet No. 1046 presents details of automatic clamping for fixtures in connection with automatic processing machines for drilling and tapping—clamping is arranged for either hydraulic or electric operation and eliminates use of wrenches—issued by National Automatic Tool Co., 715 S. N St., Richmond, Ind.

▲ Mention Item NED-1268 when writing ▲

SPRINGS—36-page illustrated "Handbook of Technical Data on Springs" third edition offers concise data on such subjects as design formulation, load deflection and proper methods of specifying springs—suggestions for making spring calculations are presented—issued by Accurate Spring Mfg. Co., 3805 W. Lake St., Chicago 24, Ill.

▲ Mention Item NED-1269 when writing ▲

SPRAY BOOTHS—16-page illustrated bulletin No. 201 discusses salient features, advantages and selection of Hydro-Whirl wet type spray booths—batch type, down-draft and conveyorized booths are covered—available upon letterhead request—issued by Peters-Dalton, Inc., 17900 Ryan Rd., Detroit 12, Mich.

▲ Mention Item NED-1270 when writing ▲

Quickly and Easily Installed No Engineering Problems

Lyon Gravity Roller Conveyors—packaged in 10' lengths and curved sections (3 widths) for convenient delivery from dealers' stocks—combine minimum weight with high load capacity. Ball bearing equipped rollers are exceptionally "lively." Special adapters ensure perfect alignment of rollers under all conditions.

LYON METAL PRODUCTS, INCORPORATED
General Offices: 222 Monroe Avenue, Aurora, Ill.
Branches and Dealers in All Principal Cities

▲ Mention Item NED-1271 when writing ▲

ANOTHER NEW *Diamond* inclinable open-back PUNCH PRESS!

Massively built with semi-steel castings for exceptional strength and rigidity. Large bed area and opening. Sliding surfaces precision ground and hand scraped. Positive, instant-acting clutch, extra heavy flywheel, streamlined design. NEW CIRCULARS AVAILABLE! Write today.

SPECIFICATIONS

Capacity Rating	28 Tons
Bed Area	13" x 22"
Bed Opening	6" x 9½"
Shut Die Height	9"
Standard Stroke*	3"
Flywheel Speed	125 Max.

*5" Stroke maximum on special order

OTHER DIAMOND PUNCH PRESSES AVAILABLE in 7- 9- 12- and 14-ton capacities. Write for literature.

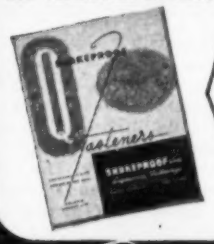
DIAMOND MACHINE TOOL CO.
DEPT D 2429 S. OLYMPIC BLVD • LOS ANGELES 23, CALIF.
DIAMOND
MANUFACTURERS of the DIAMOND LINE of PRECISION MACHINE TOOLS and ACCESSORIES

▲ Mention Item NED-1272 when writing ▲

SHAKEPROOF ANNOUNCES THE Q-TWO FASTENER

A SIMPLIFIED QUICK-OPERATING CLOSURE FOR GENERAL INDUSTRIAL USE

Here is a brand new quick fastener consisting of only three parts that can be snapped into prepared sheets without special tools! Provides positive locking, easy assembly and quick removal. Compensates for variations in sheet thickness and in alignment.



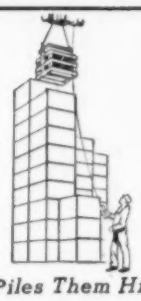
WRITE FOR THIS NEW CATALOG

Contains engineering and procurement data, installation instructions and detailed drawings. Write today for your copy of Shakeproof Q-Fastener Bulletin S-751

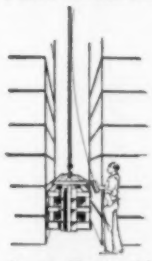
SHAKEPROOF inc.
"fastening Headquarters"
Division of ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois

▲ Mention Item NED-1273 when writing ▲

CRATE GRAB AND CARRIER

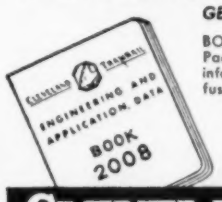


Piles Them High



Works in Tight Spots

Completely motorized. Lifts one more boxes at a time to 20 ft. hei Motor-driven grab arms spread f 18" min. to 36" max. Enables qu safe stacking at g heights. Increa storage capacity.

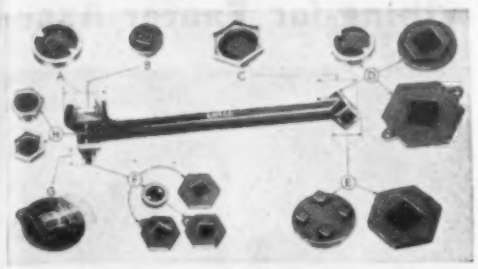


GET THIS BOOK!
BOOKLET No. 2008
Packed with valuable information . . . Profusely illustrated.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6602 E. 285th St., Wickliffe, Oh

CLEVELAND TRAMRAI

▲ Mention Item NED-1274 when writing ▲



A safety-tool that fits 15 different closures

Ampco's all-purpose bung wrench

One of a line of more than 500 safety tools recommended by casualty insurance and safety authorities for use amid explosive gases, fumes, and dust — this all-purpose bung wrench is a handy, safe tool for opening drums of gasoline or dozens of other inflammable materials. The diagram shows you how it is designed to fit 15 different closures.

Remember, Ampco offers the most complete line of safety tools on the market. Available in Ampco Metal, Ampco Beryllium-copper, and Monel Metal, they all have high strength and hardness, and exceptional resistance to corrosion. Write for latest safety-tool catalog. Ampco Metal, Inc., Dept. NE-2, Milwaukee 4, Wisconsin.

AMPCO SAFETY TOOLS S-25A

▲ Mention Item NED-1275 when writing ▲

Zagar "More Production"

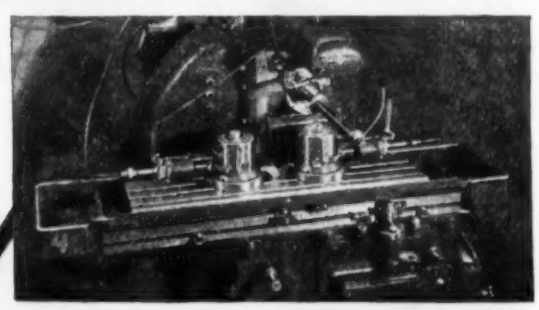
COLLET FIXTURES and COLLETS

DO MORE FASTER BETTER AT LESS COST

CREASE YOUR PROFITS by producing better k . . . faster . . . with Zagar "More Production" Collet Fixtures and Collets! Whatever the milling, drilling, tapping, slotting, grinding urning . . . Zagars do it easier — faster — ter—*without costly special fixtures and ling.* Use Zagars for holding or indexing in zontal or vertical positions. Load and unload le running; air-operated . . . manual . . . or automatic control.

AGAR TOOL, INC.
80 Lakeland Blvd., Cleveland 17, Ohio

WRITE FOR CATALOG NO. 3-2



Load and unload while milling—two Zagar air-operated fixtures utilize the full capacity of an automatic miller

Zagar PRODUCTION TOOLING FOR INDUSTRY

▲ Mention Item NED-1276 when writing ▲

ELECTRICITY for LIGHT and POWER . . . ANYWHERE

Models range from 350 to 35,000 watts. A.C. types from 115 to 660 volts; 50, 60, 180 cycles, single or three phase; and 400, 500 and 800 cycles, single phase. D.C. types from 6 to 660 volts.

Generating Plants, driven by Onan-built, 4-cycle gas ines provide dependable light and power for projects remote central station power. Combining compactness with high put and flexibility, they are ideal also as stand-by and rgency sources of electricity. Suitable for mobile or stationy service.

65 DIFFERENT MODELS . . . WRITE FOR FOLDER TO:
D. W. ONAN & SONS, 3665 Royalston Ave., Minneapolis, Minn.

D. W. ONAN & SONS

▲ Mention Item NED-1277 when writing ▲

New Literature—Continued

POLISHING MACHINERY—20-page illustrated catalog No. 55 describes details and presents specifications of single and variable speed polishing lathes and abrasive belt, automatic and cylindrical finishing machines—backstands, contact wheels and other accessories are shown—issued by Hammond Machinery Builders, Inc., 1623 Douglas Ave., Kalamazoo 54, Mich.

▲ Mention Item NED-1278 when writing ▲

ALUMINUM ALLOYS & MILL PRODUCTS—248-page illustrated book "Reynolds Aluminum Alloys and Mill Products" discusses history of aluminum, characteristics, sheet and plate, extruded shapes, roll formed shapes, tubing and pipe, wire, rod and bar, forging stock, ingot metal and press forgings—numerous tables of technical data are included—price is $2—published by Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.

▲ Mention Item NED-1279 when writing ▲

RAILROAD BUILDING MAINTENANCE—16-page illustrated "Railroad Bridge & Building Maintenance Handbook" discusses use of resurfacers, Concretite concrete additive, Stontite waterproofer, concrete surface treatment, plastic and liquid roof resurfacers, Stonpach floor patching materials and similar products—issued by Stonhard Co., 403 N. Broad St., Philadelphia 8, Pa.

▲ Mention Item NED-1280 when writing ▲

NYLON BRUSHES—16-page illustrated pamphlet "Answers to Questions Concerning Nylon Paint and Varnish Brushes" discusses manufacture, application and cleaning of Nylon brushes—variety of different types is shown—issued by Wooster Brush Co., 601 Madison Ave., Wooster, O.

▲ Mention Item NED-1281 when writing ▲

INDUSTRIAL TRUCKS & CRANES—Illustrated catalog on basic models for 1947 shows 31 models including low-lift trucks with and without crane units, high-lift platform trucks, fork type, cranes, stationary-bed load carriers and tractors—they are available with either electric or gas-electric power—issued by Elwell-Parker Electric Co., 4502 St. Clair Ave., Cleveland 14, O.

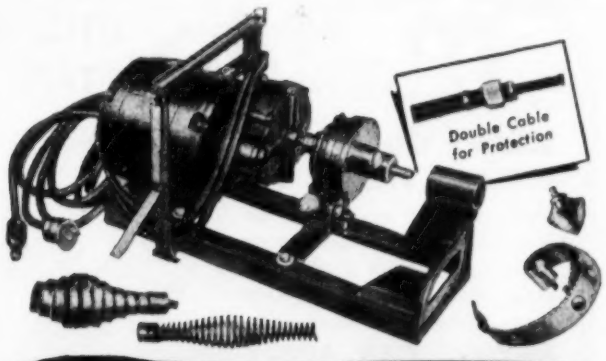
▲ Mention Item NED-1282 when writing ▲

INFRARED LAMPS—6-page illustrated folder Y-689 contains descriptions, photographs and technical data on line of industrial heat lamps—points out many industrial uses for lamps—describes four main types of ovens used in employing infrared lamps and shows diagrams of each—issued by General Electric Co., Dept. 166-NED, Nela Park, Cleveland, O.

▲ Mention Item NED-1283 when writing ▲

TRANSMISSION EQUIPMENT & PARTS—320-page general catalog No. 54 contains complete specifications and list prices on all stock sizes of spur, bevel, miter, helical and worm gears, worms, chain and sprockets, Reductor speed reducers, Ratiomotor motorized speed reducers, couplings, collars, pulleys, pillow blocks, shaft supports, ball bearings, universal joints, pinion wire, racks etc.—issued by Boston Gear Works, 16 Hayward St., North Quincy 71, Mass.

▲ Mention Item NED-1284 when writing ▲



electric eel sewer & drain cleaning machines . . .

quarantees safety to operator because of Stationary Outer Sheath

- Rotating Inner Cables
- Lines 1¼" to 8"
- Runs up to 200 ft.
- 8 years in production
- Over 4,000 in use
- Each tool Engineered for particular purpose

OHIO TOOL & ENGINEERING CO.
SPRINGFIELD • OHIO

▲ Mention Item NED-1285 when writing ▲

Hanna hydraulic cylinder catalog no. 233

full of information you will want!

IN this Hanna catalog you can quickly find the model, size and other details of the hydraulic cylinders you need. It contains other very useful data you will want for reference. Write for a copy today, at no obligation.

Hanna Engineering Works
HYDRAULIC AND PNEUMATIC EQUIPMENT . . . CYLINDERS . . . VALVES . . . RIVETERS
1765 Elston Avenue, Chicago 22, Illinois

▲ Mention Item NED-1286 when writing ▲

DURAMETALLIC Packings

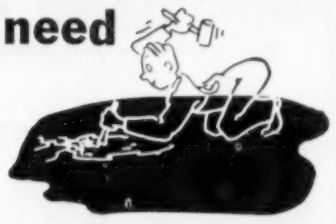
The ORIGINAL twisted flexible metallic packing that provides long periods of uninterrupted service.

THERE IS A PROPER TYPE AND STYLE TO MEET YOUR NEED
Write for free Engineering Counsel on your problems

DURAMETALLIC CORPORATION
The PERFECT SEAL
KALAMAZOO MICHIGAN

▲ Mention Item NED-1287 when writing ▲

There's no need to rip up your old floor . . .



STONHARD RESURFACER makes repairs to wood or concrete floors easy. Your handy man can quickly install STONHARD RESURFACER at a thickness of ½" right over the old, worn floor surface.

Floors resurfaced with STONHARD are warm, dry and resilient . . . backed by the offer, "Satisfaction or no charge".

Return this coupon for valuable free folder. . . . no obligation.

STONHARD COMPANY, 808 Term. Com. Bldg., Phila. 8, Pa.
Send us a free floor maintenance guide and information about STONHARD RESURFACER.

Firm.....
Mr..... Title.....
Address.....
City..... Zone..... State.....

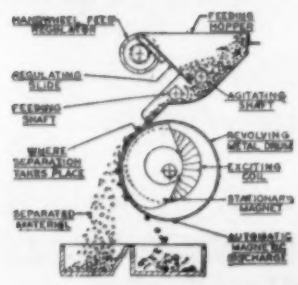
STONHARD COMPANY
Building Maintenance Materials • Since 1922
808 Terminal Commerce Bldg. Phila. 8, Pa.

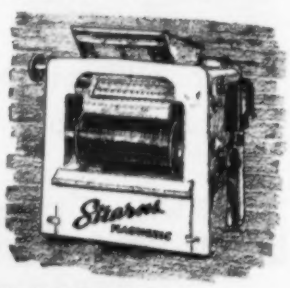
▲ Mention Item NED-1288 when writing ▲

MAGNETIC Separators for RECLAIMING METALS

Scrap metal values go up when you use this improved Stearns Type "L" Magnetic Separator for reclaiming your brass, aluminum, babbit and other secondary metals from turnings, borings, chips and metal refuse. Automatic, efficient, economical, a definitely profitable investment.

STEARNS MAGNETIC, MILWAUKEE 4, WIS.





▲ Mention Item NED-1289 when writing ▲

▲ Mention Item NED-1290 when writing ▲

HANDEE • TOOL OF 1001 USES

JACK OF ALL TRADES AND MASTER OF PLENTY

It's quick, it's deft, it's conveniently small, yet the Handee Tool packs a terrific wallop! Handee is the original, single hand controlled, electrically driven tool—and it's the finest today. It can be used at the bench or carried right to the job. It reaches hard-to-get-at places on machinery, touches up perishable tools, grinds dies, chip breakers on broaches, removes burrs, etc. Runs at a cool 25,000 r.p.m. AC or DC. Wt. 12 oz.

Combined with its accessories and exclusive attachments, the Handee Tool performs more operations with greater accuracy than any other portable electric tool at any price.

HANDEE KIT

Strong, compact steel carrying case holds the Handee Tool and a complete assortment of accessories. Postpaid, $27.50. Handee with 7 accessories only, $20.50.

CHICAGO ACCESSORIES fit any power tool. The most complete line available. Over 500—all finest quality. The right one for every job!

Write for 64-page catalog

CHICAGO WHEEL & MFG CO., 1101 West Monroe St., Dept. NE, Chicago 7, Ill.

▲ Mention Item NED-1291 when writing ▲

New Literature—Continued

DRILLING & TAPPING EQUIPMENT—Three illustrated bulletins Nos. AM-47, MJ-47 and T-47 present data on A-M machine for production drilling of small holes, Maximus and Maxi-Jr. drilling machines, and equipment for production tapping of small holes, respectively—issued by Hamilton Tool Co., 901 Hanover St., Hamilton, O.

▲ Mention Item NED-1292 when writing ▲

CORROSION RESISTING EQUIPMENT—20-page illustrated general catalog H describes various types of corrosion resisting equipment including Durcopumps; plug, Y, check, angle, float, foot, relief and mechanically operated valves; heat exchangers; split-flanged pipe and fittings; mixing nozzles; steam jets; immersion tubes; ejectors; tank outlets; kettles; tanks; exhaust fans; sinks; bowls; strainers; traps and Kjeldahl digestion and wet ashing equipment—issued by Duriron Co., Dayton 1, O.

▲ Mention Item NED-1296 when writing ▲

BOXES & CRATES—12-page illustrated pamphlet "By These Good Names You Shall Know Us" shows and describes Generalift pallets, pallet boxes, wirebound crates and boxes, stitched panel crates and corrugated containers as used by various manufacturers—issued by General Box Co., Corner of Dearborn & Illinois Sts., Chicago 10, Ill.

▲ Mention Item NED-1294 when writing ▲

MOTORIZED LIFT TRUCK—6-page illustrated bulletin "The 3 Men Who Aren't There" discusses how HydroLectric motorized lift truck cuts operation and maintenance costs—detailed diagrams show mechanical structure and dimensional specifications of truck—issued by Lift Trucks, Inc., Dept. 21, 2425 Spring Grove Ave., Cincinnati 14, O.

▲ Mention Item NED-1295 when writing ▲

CUTTING FLUIDS & COOLANTS—36-page illustrated technical bulletin No. 5 consists of four papers presented by authorities in cutting fluid field: "What the Tool Engineer Should Know about Cutting Fluids", "The Testing of Cutting Fluids", "Cutting Feeds and Speeds" and "The Selection of Cutting Fluids"—issued by D. A. Stuart Oil Co., 2747½ S. Troy St., Chicago 23, Ill.

▲ Mention Item NED-1296 when writing ▲

HYDROCARBON ANALYZER—10-page illustrated bulletin No. 205 discusses adsorption fractionation, describes Turner-Burrell adsorption fractionator specifically designed for light hydrocarbon analysis and covers its utilization and operation—unit separates, identifies, measures and collects components of light hydrocarbon gas mixtures and records analytical data—issued by Burrell Technical Supply Co., 1936-42 Fifth Ave., Pittsburgh 19, Pa.

▲ Mention Item NED-1297 when writing ▲

ANTIFRICTION BEARINGS—168-page illustrated manual No. 15 is engineering and application data reference volume for ball radial, ball reciprocating, radial roller, taper roller and thrust bearings—standard method of numbering is used to facilitate recognition of bearing type and size—available upon letterhead request—issued by Torrington Co., Bantam Bearings Div., South Bend 21, Ind.

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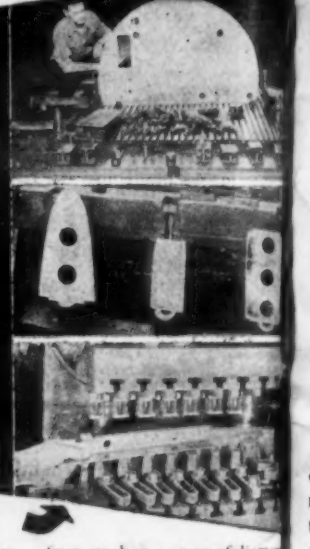

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